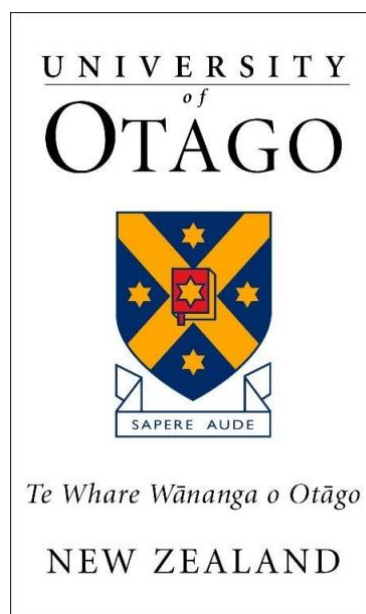


Exploring the adequacy of central city public space in New Zealand:

Establishing a simple evaluative tool to measure public
space success



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Abstract: Public space is a vital component of the public realm. Without it, cities lack the interaction and social sustainability that people desire. After various debates surrounding the apparent recent decline of public space, planners and urban designers have begun to reinstate its importance, especially in the central city. However, despite its importance, a lack of quality public space provision has been noted throughout many New Zealand central cities. A review of the relevant literature also determined that there are limited methods available to evaluate public space simply and efficiently. Many of the current methods are resource and time intensive, which has meant that the evaluation of many ongoing and proposed public space developments, such as those occurring throughout New Zealand central cities, are therefore neglected. This ultimately limits public space success. This thesis therefore aims to explore the adequacy and success of central city public space in New Zealand through the development and application of a new evaluative tool.

This research evaluated three case study central cities throughout New Zealand: Wellington, Christchurch, and Dunedin. The research approach involved developing a public space evaluation tool based on best practice. This tool developed and applied simple evaluations of ten key components so that clear, quantitative results could be achieved. Key informant interviews were also carried out to help supplement primary findings.

Three research questions were established to help answer the overall aim. The first question considered the overall adequacy and success of central city public space in the three case study cities. After substantial analysis, public space was found to be an overall success in Wellington, adequate in Christchurch, and neither adequate nor successful in Dunedin, though there was variance between individual spaces in each city. The second research question explored the overall success of individual public space components across the three cities. Safety and vision and accessibility were found to perform the highest, while innovation and amenity provision were determined to offer notable potential for improvement. Furthermore, overall population, diversity, stay time, and interaction within space all performed below average. The third research question determined that the use of this tool offered two key strengths. (1) It offers the capability to measure public space projects efficiently before, during, and after a development process. (2) It is effective in determining preliminary issues in public space before comprehensive evaluation or developments proceed. As a result of these findings, various recommendations were established for New Zealand wide application, as well as for each individual case study city.

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List of Abbreviations

CBD: Central Business District

CCPS: Central City Public Space

POE: Post-Occupancy Evaluation

PSET: Public Space Evaluation Tool

Chapter 1 - Introduction

1.1 Introduction

Central city public space (CCPS) is often regarded as the most important component of a city. Well established authors such as Jane Jacobs (1961:1) have often referred to these “main public places” as their “most vital organs.” Public space offers opportunities for people to come together, whether that is through functional daily activities, or through more optional and recreational activities, it is therefore important that we create environments that enable people to satisfy their social desires (Carr, 1992; Gehl, 2010). Public space has been present in human environments throughout history. As Cooper Marcus and Francis (1997) explain, the medieval town squares or piazzas were often ‘the heart of the city’, so much so, that it is unlikely that the medieval city could function without it. CCPS today often offers a reflection of the perception of a whole city (Jacobs, 1961), Pasaogullari and Doratli (2004:226) wrote that “great cities are known for their great public spaces.” When considering some of the most famous or iconic places in the world like Times Square, New York, or Piazza San Marco, Venice, it is often forgotten or overlooked that these form vital roles in the public realm as public spaces and ensure the social sustainability of their cities.

1.2 The decline of public space

Despite public space playing a vital role in town or city structure in the past, many current writers on public space imply that there has been a general decline of provision and management within the public realm (as explained by Carmona *et al.*, 2010). One of these declines has been attributed to the rise of private vehicles and a heavy emphasis of traffic and physical city related development. Throughout the 19th century, many believed that planning for the public realm had become secondary to the dominant forces of traffic, and this was drastically impacting the way that people would live and interact especially in the central city (Carr, 1992, Gehl 2010; Jacobs, 1961; Mumford, 1937). ‘Modernism’ became popularised by Le Corbusier (1929), the concept entailed a form of city design which took much of the focus away from individual public spaces and streets, and focussed more on the wide scale planning of large blocks of buildings. Jane Jacobs, one of the most prominent writers and critiques of modernism, explained how this type of development was essentially ‘killing’ the social nature of cities in her 1961 book *The Death and Life of Great American Cities*.

Many also believe that the more recent privatisation of space and the rise of more advanced technology have further contributed to the decline of public space (Carmona *et al.*, 2010; Carr *et al.*, 1992). With more private space available throughout the city, people become less inclined to visit CCPS. Additionally, with the advanced ability to communicate through technology, people may be more reluctant, or do not feel the need to use public spaces as point for social contact to the same extent. Thus, a resurgence in use and the way that public spaces are designed must be more critically considered. Gehl (2010) explained how many public spaces are no longer required for necessary operational activities to occur (such as trade in the marketplace), but more so primarily exist for more optional activities by nature occur (Gehl, 2010). Carr *et al.*, (1992) believes that as public life and culture evolves, it is important that those planning and designing space are able to react so that these spaces are able to be maintained or ‘revived’ to ensure that they can effectively perform, especially in the central city. The term ‘public space renaissance’ (as explained by Carr *et al.*, 1992) recognises that planners, and designers have become more aware of these modern day public space concerns, and as a result have placed greater emphasis on developing more successful CCPS.

1.3 What is central city public space?

A public space can be anything from a large town square, to a small laneway or shared space on the side of a street. Carmona *et al.* (2010) in their book *Public Places – Urban Spaces* explain that a public space is the result of the relationship between people and their environment and that “by shaping the built environment, urban designers influence patterns of human activity and, thus, of social life” (Carmona *et al.*, 2010:133). Therefore, a public space is an area that relies on the everyday presence and interaction of people, if a space is empty, then is it really a ‘public’ space? The famous quote from Gehl (2010:9), “first we shape the cities – then they shape us” reinforces the idea that the city is dependent on both the physical availability of space, but what truly defines the space and its success are the peoples who shape and interact in it. This thesis will be specifically focusing on ‘central city’ public spaces – places that are areas of mixed use and generally high population densities. Most of the studied spaces will be situated within walking distance of the central business district (CBD) of their respective cities.

1.4 What makes a successful public space?

People's interactions in public spaces do not just happen randomly due to personality or human nature, they happen because of good urban design. This is just one idea explained by Gehl in his book *Cities for People* (2010) that offers considerations for creating successful public space. He also explains that good public spaces will increase opportunities for optional activities – activities that occur out of a pure 'wish to do so,' provided that, it is permitted by an appropriate surrounding environment (such as optimal weather and quality space). There are many components that arguably make a good public space. Authors such as Cooper Marcus and Francis, 1997; Gehl, 2010, Montgomery, 2007; and the Project for Public Space (n.d.) have produced public space design guidelines that offer a variety of components that should be considered in good public space design. Many of the components or aspects that have been determined to create successful public space in these guidelines are: a high population, diverse range of users, lots of interaction, are green, safe, innovative, accessible and visible, and provide adequate amenities. The more of these components or 'layers' that are present within a space typically leads to better overall success and subsequent higher amounts and diversity of users (Project for Public Space, n.d). This thesis will investigate many of these components and will aim to establish which are most critical, thus, indicating what is best practice when trying to develop a tool that can evaluate and subsequently improve central city public space.

1.5 How is public space success measured?

While many methods exist to evaluate public space, many of them are very specific, place orientated, and time and resource heavy. Many tools exist to measure individual components of public space for example using pedestrian counts to measure population, or measuring the walk speed or stay time of people within a space (Gehl and Svarre, 2013). Alternatively, many public space design guidelines such as that of Cooper Marcus and Francis (1997) *Design Guidelines for Urban Open Space* exist to offer guidance on public space development. However, missing from these works is the ability to simply and efficiently evaluate the overall success of a CCPS and its individual components. This thesis establishes the Public Space Evaluation Tool (PSET): a tool that builds on these many best practice principles and guidelines that exist and develops a simple quantitative scoring system that offers clear, comparable results. The tool allows for efficient evaluation of a public space to help increase understanding of what components of a space is effective or ineffective. This allows planners,

urban designers, and decision makers to deliver more justified and confident decision making throughout the various public space projects that are developing around New Zealand.

1.6 Research aim and objectives:

The research aim of this thesis is to explore the adequacy and success of central city public space in New Zealand through the development and application of a new evaluative tool. To achieve this aim three main research questions were established:

1. How adequate and/or successful is central city public space throughout New Zealand?
2. What aspects of central city public space are successful or unsuccessful in New Zealand?
3. Can a simple and applicable evaluation tool allow for effective measurement of the many different aspects and overall success of public space?

1.7 Public space in New Zealand

Wellington, Christchurch, and Dunedin were used as three case studies throughout the research process. Each of these cities offered a number of similarities and notable differences that would allow for interesting insights into New Zealand's public space provision. Within each city four public spaces from four individual categories are evaluated. These categories included a water based space, a city square, a pedestrianised street or shared space, and a recently redeveloped space. This allows for a more objective approach as well as for more significant insights into whether types of spaces work better than others.

Each of these cities have developed a number of plans and strategies that guide public space development throughout their central cities. Namely, the Wellington Urban Growth Plan, Christchurch Central City Recovery Plan, and the Dunedin Central City Plan are some of the core documents that are analysed to better understand the context of the city, and their current provision of public space now and for the future. These plans have indicated that many of these New Zealand cities lack adequate CCPS. One example of this is highlighted in the Dunedin Central City Plan, it states: "*there is a lack of large public open/green spaces within the central city.*" Christchurch indicated a variety of CCPS concerns especially after the city was devastated by the 2010-2011 earthquakes and is still in regeneration mode. All three of these case study cities are undergoing CCPS upgrades (Dunedin and Christchurch more so than

Wellington). Many of these public realm developments are already underway, with many planned for the near future. Therefore, it is critical that there is a clear understanding of the many aspects of CCPS that are effective, and those that are underperforming, so that newly developed spaces can ultimately be improved. Additionally, a simple and effective evaluation tool that can evaluate the variety of components of public space could be extremely useful for ensuring that public space can be measured and subsequently continually improved into the future.

1.8 Research methods

As mentioned in the aim, methods, and case studies, a key part of the research process was developing an effective and efficient tool that could evaluate public space through a series of scores. This would ultimately allow for concise, quantitative results that would allow for simple, comparative analysis and subsequent justified decision making. Based on best practice principles of good public space design, the ten categories that the PSET evaluated were a combination of five people based considerations, and five design based considerations. The five people based components were: population, ratio of used space, stay time and walk speed, diversity, and interaction; the five design based components were green and environmental connection, safety, innovation, vision and accessibility, and amenity provision. In addition to assist answering these research questions, multiple key informant interviews are undertaken to help provide further understanding of PSET results, as well as offer supplementary qualitative results that are necessary for adequately answering focus question 3, as well as other findings.

1.9 Thesis structure

To more effectively answer the research aim, this thesis is separated into seven chapters. The following chapter contains a literature review that establishes much of the relevant information surrounding the topic of public space, as well as a number of best practice considerations for successful public space development. Chapter three outlines the combination of quantitative and qualitative methods used throughout the mixed-methods research approach. Chapter four establishes the context (including an analysis of the plans and strategies that guide development) of the three case study cities and their four individual spaces, while chapter five displays the results from the PSET and key informant interviews. The findings of the research are then discussed in chapter 6 and the research questions are answered. A number of recommendations are also established at the end of Chapter 6. Finally, chapter 7 concludes the

thesis and the findings and outlines the potential limitations and further research that may be useful to undertake in the future.

Chapter 2 - Literature Review

2.1 Introduction

The purpose of this literature review is to provide an understanding of how the concept of public space has developed through the history of city planning. It will investigate how public space has been emphasised and prioritised throughout the past and where the importance of public space sits in urban planning today. This review will also attempt to determine the most significant components of what makes a central city public space successful through an evaluation of relevant literature. This will provide the basis for the development of an effective methodology - including an evaluative framework, which will be used to analyse public space and establish a set of best practice criteria to measure the success a number of central city public spaces.

2.2 The Evolution of Public Space

Public space has been present in most human environments throughout history. Whether it was present in the form of a market place in an ancient civilisation, or a town square in a developing settlement, there is always a desire for people to come together and interact when living in a village, town, or city (Carr et al., 1992; Cooper Marcus and Francis, 1997). Cooper Marcus and Francis (1997) explained that “the medieval town square, or piazza, was often the heart of a city... It is doubtful that the medieval city could function without its piazza or town square.” Today’s public spaces face many similar as well many different considerations and issues than in the past. It is therefore important that there is a clear understanding of what make public spaces work and ideally, successful. Additionally, public space will always be important when it serves as a reflection of the overall city; Pasaogullari and Doratli, (2004:226) wrote, “great cities are known for their great public spaces;”

2.2.1 Changing cities: A history of the forgotten human dimension

The value and importance of public space has been argued throughout planning history by some of the most prominent figures in planning theory (such as Gehl, 2010; Jacobs, 1961; Mumford, 1937). Though the history of city planning is relatively short, it is rich with many key debates surrounding the value of public space. A debate that has been present almost throughout the history of city planning, surrounds the relationship between built urban form and the interacting human dimension. A prominent side of this argument is that the human

dimension has been considered secondary to the more dominant forces of built urban form, especially through periods of massive city growth and technological development (Carr, 1992; Gehl, 2010; Jacobs, 1961; Mumford, 1937; Senett, 1992).

2.2.2 Vehicles and physical city development versus people:

Mumford was one of the first to critically analyse the relationship between planning for physical city development versus planning for the human dimension. In his book *What is a city?* (1937) Mumford explained that the importance of good social functions had been treated secondary to physical city development. He states, “most of our housing and city planning has been handicapped because those who have undertaken the work have had no clear notion of the social functions of the city” (Mumford, 1937 in LeGates and Stout, 2011:92). One of his concepts that resonates throughout other past and present planning writers is his analogy that the city is a “theatre of social action” and that within it, public space is the stage. LeGates and Stout (2011) explained that the concept of public space being a theatre influenced many other critics and researchers, such as Gehl, (2010), Jacobs (1961), and especially Carr *et al.*, (1992) who wrote “public space is the stage upon which the drama of communal life unfolds.” These writers helped shape and change the direction of planning towards a more ‘people planning’ based paradigm, or otherwise known as the ‘human dimension’ in which public space plays a vital role (Gehl, 2013; Jacobs, 1961).

Jacobs became one of the most well-known planning theorists after the publication of her book *The Death and Life of Great American Cities* in 1961, where she critiqued the concerning direction in which cities were heading. Jacobs believed that the current planning system ‘modernism,’ popularised by theorists such as Le Corbusier (1929), ignored concepts of participatory planning and liveable cities. Le Corbusier’s ideas influenced the construction of what could essentially be called ‘mega cities’ or ‘contemporary cities’ as he called them. These cities focussed heavily on the large city scale and emphasised the development of individual blocks of buildings rather than the many individual streets and spaces that people would live and interact in. Jacobs argued (like Mumford had done in the past) that this style of city planning would continue to become the ‘death’ of neighbourhoods and social sustainability, where the physical form of the city became primary to the secondary nature of people and their subsequent liveability. Her ideas were warmly received, which contributed to the shift towards ‘people planning’. Planners, urban designers, architects therefore became more focussed on the

public realm, instead of an ‘obsession with traffic flow’ as Carr *et al.*, (1992) explained, bringing an end to the history of a ‘neglected human dimension’ (Gehl 2013).

2.2.3 Declining public life?

One evolving argument surrounding the human dimension in public space, is that public life within these spaces is declining, particularly as the purpose and intentions of public space becomes less clear (Goheen, 1998; Mitchell, 1995; Senett, 1992). It is evident that the purpose and nature of public spaces has changed over history, as Gehl and Svarre state, “in a historical perspective, the use of public space has gradually evolved from activities primarily motivated by necessity to those more optional in nature” (Gehl and Svarre, 2013:17). An example of this could be seen in the common practice of trade in central markets, which was once an essential part of people’s livelihoods. Whereas today, this type of activity is more likely seen as an optional and more uncommon event (Gehl, 2010).

Another contributing factor to the decline of public life is the rise of private space. Key arguments made by critics such as Carr *et al.* (1992) is that the need and desire to utilise public space is compromised by the rise in a growing trend of the privatisation of space. Cooper Marcus and Francis (1997) in their book *People places: Design Guidelines for Urban Open Space* acknowledged that due to the nature of today’s cities popularity of privatising space, many functions of public space have been ‘made obsolete’. They explain that while many of these public areas would have once been used extensively over the day, all days of the week, they now only serve as less significant spaces with limited use. Examples of the rise in private space causing decline in public life and public space can be observed through the growing number of central squares or plazas that are only occupied by workers during lunch hours on weekdays (Gehl and Svarre, 2013), or the rise of shopping malls becoming the new centre for public life (Carr *et al.*, 1992). Cooper Marcus and Francis (1997) state that in many central city areas, public spaces have become scattered and unconnected as much of their original purpose has diminished and less people utilise these public areas. Because privatisation of space is a growing trend, many agree that this is leading to a changing and modernising way of life and is impacting the use of public spaces throughout cities around the world (Banerjee, 2007; Carmona, 2010a; Carr *et al.*, 1992).

This decline in public space can also partly be contributed to the rise of vehicles within the streets of a city which restrict and repel pedestrian use, an observation that was especially

documented across the United States (Carr *et al.*, 1992; Jacobs, 1961). As stated above, the remaining obsession with transport planning has led to further decline of pedestrian access throughout cities across the world, according to Forsyth and Southworth (2008). They believe that evolving systems of transport, including high speed traffic and large-scale highways have led to further degradation of pedestrian accessibility and attraction to the space. The transition of streets being overtaken by vehicles rather than filled with people was a shock to many city's public realms.

More recently, another argument made by researchers is that technology and the internet have also contributed to further decline in public life (Carmona, 2010; Carr *et al.*, 1992). With improved methods of communication and other conveniences such as increased access to private vehicles, people are less inclined to use public spaces. As Gehl (2013) observed, using public space is increasingly becoming less of a necessity and more optional by nature. There are several other arguments in which people believe public life is declining, some for example, require detailed understanding of the role of politics in public space and how they can become a point of tension in the community (Mitchell, 1993). The challenge is how to react to these changes and revitalise the public realm so that it can again become desirable for all members of the public.

2.2.4 A Public Space 'Renaissance'

While some have argued that public life is declining, authors such as Carr *et al.* (1992), Cooper Marcus and Francis (1997), and Gehl (2013), as well as organisations such as the Project for Public Space (n.d.) believe that many spaces require improvement and better prioritisation in city planning. Understanding good urban design that delivers for the public realm is critical to ensure a public space is the most successful it can be. Carr *et al.*, (1992) states that there is somewhat a 'public space renaissance' where a changing and greater variety of spaces are expanded into public space concepts; some of these include greenways, new commercial spaces, and community gardens. Carmona, (2010) explained that while there are still many of those who doubt the value of public spaces within the city, many believe that for too long now public space has been dramatically under-managed therefore pushing the notion of a 'public space renaissance' further ahead. As a result, planners and urban designers need to think more creatively about how they develop public space, so it does not become a homogenous concept with the same uninspiring design. One way of doing this is to use the physical environment of cities to their advantage. By developing or revitalising a waterfront, or other attractive natural

landscapes or features, planners and designers can create a more positive and evolving city that is more desirable and helps people remember how important public space can be in everyday life. (Carmona, 2010). When discussing people's desire to use public space, a past mayor of Los Angeles offered the following insights: "In a far-flung city like Los Angeles, too frequently we lead anonymous lives, isolated, confined to our cars... There's a hunger for pedestrian life. People are looking for ways to get out of their cars and live on a human level in an urban centre" (Morgan, 1996:59 in Cooper Marcus and Francis, 1997).

2.3 The human dimension in public space

It is important to understand why public space exists and what their purpose is in modern cities. Carr *et al*, (1992:1) summarised that "public space is the stage upon which the drama of communal life unfolds. The streets, squares, and parks of a city give form to the ebb and flow of human exchange." Looking further into how people utilise, create and interact with an environment to create public space, Goheen (1998) argued that public space is made by those who use it, rather than made by those who design it and designate it as a public space. Often a designated 'public space' may be an empty, meaningless area which holds no value or attachment to members of the community. While vice versa, an area that is not intended for facilitating public space use, can become could become a well-used public space. Goheen (1998:479) summarises this in one statement: "citizens create meaningful public space by expressing their attitudes, asserting their claims and using it for their own purposes. It thereby becomes a meaningful public resource."

In contrary to the above argument, Senett, in his book *The Fall of Public Man* debates these more positive views. He states that the public realm has become 'meaningless' and that society has "lost a sense of itself as an active force as a 'public'" (Sennett, 1992 in Goheen, 1998:482). He also believes that in the modern era, there is no human connection between people and the physical space, likely due to the view that public spaces have become an optional environment rather than a necessary one. However, more contemporary researchers such as Gehl (2010) believe that these sort of arguments can be dissolved by good planning and urban design, which ensure that people are at the core of city priorities. Above all else however, it is important to understand that it is not just the physically developed environment that makes a public space, but rather the people who utilise and shape it into what it exists as (Cooper Marcus and Francis, 1997).

2.4 Specialist development and understanding of public space

As the debates and discussions have developed over time, there has been more specialised development and evaluation of what makes good or successful public space (Cooper Marcus and Francis, 1997; Gehl, 2013; Montgomery, 1937). Cooper Marcus and Francis (1997) in their book *People Places: Design Guidelines for Urban Open Space* state that to create a ‘people place’ planners and designers should acknowledge a number of recommendations. They believe that ensuring the presence and quality of the following components is significant to creating a successful space and therefore determined that a public space should:

- Offer visual and physical accessibility for potential users.
- Be equipped to facilitate ‘likely and desirable’ activities and actions through amenities.
- Feel safe and secure to users.
- Support a diverse range of different groups including ethnicity and age, while also being accessible to disabled users and children.
- Be creative and interactive such as by incorporating components that users can manipulate or change such as interactive fountains and sculptures.
- Be sufficiently maintained for what is expected of such a space.
- Balance the design as a social setting as well as visually designed space.

Like Cooper Marcus and Francis’ (1997) public space guidelines is Montgomery’s (2007) *Indicators of successful urban places*. Though the context of these guidelines can be applied more widely across the city, it offers useful insights for creating successful public space. Many of the individual indicators show notions of the concept that space design should be creative and innovative (as will be discussed later in detail). Montgomery’s guidelines repeatedly use terms like ‘interesting, surprising, and experimental,’ which makes links back to ideas from Gehl (2010) who believes that to battle the concepts of public space decline, planners and urban designers should think more creatively and innovatively about how they design spaces.

- (1) Planning will be invisible and the results will look natural, as though they happened of their own accord
- (2) There will be interesting and stimulating shapes
- (3) The 'familiarity' of streets and street life will be celebrated
- (4) There will be secret places which once discovered grow on you, making you look deeper to find more
- (5) There will be surprises, to keep citizens awake, provide topics of conversation, prevent ennui
- (6) Experiment will be encouraged, and there will be exciting things to do
- (7) There will be areas and opportunities for informal, casual meetings to take place, including warm and friendly bars and pubs
- (8) Food and drink will be a treat, and people will be able to purchase and consume it at varying prices and degrees of leisure
- (9) There will be a variety of comfortable places to sit and wait—a city worth living in has to be a city worth sitting in
- (10) There will be a good balance between the needs to prevent loneliness and to preserve anonymity and privacy
- (11) Changing seasons will not draw attention away from the sterner pursuits of daily life but rather will be an integral part of a continually changing city, and celebrated as such
- (12) The senses will be heightened: affection/friendliness/hospitality; a sense of belonging; historical and cultural continuity; a sense of fun/humour; opportunities for gossip; open-mindedness; vitality; fantasy; flamboyance; colour; beauty/aesthetic stimulus

Figure 1. Montgomery's (2007) indicators of successful urban places (adapted from Sherman, 1988).

2.4.1 The Power of 10+

The Power of 10+ is a concept developed by the Project for Public Spaces (n.d.) a non-profit organisation based in New York. The organisation supports the idea of 'placemaking', which focuses on developing and improving public spaces in cities throughout world. The Power of 10+ is a design concept that the organisation applies to different types of public space across cities, for example, city squares, waterfronts, and streets. The idea is that there should not just be one reason to utilise or visit a space - there should be at least ten. It is the layering of activities and uses of a space that enrich the environment and create a space that is not dominated by one user or use type, but rather is useable by the whole community. It has been a concept that has been applied into old and new spaces where it can "revitalise urban life". The ten plus concept is flexible between spaces, for example, it might include "a place to sit, playgrounds to enjoy, art to touch, music to hear, food to eat, people to meet" and so forth. (Project for Public Spaces, n.d). It is a simple but effective concept that drives spaces to succeed on the human scale and ensure that they make the most out of an environment. It is therefore vital that there are multiple components that layer together to create a vibrant, diverse, and exciting space.



Figure 2. Melbourne, Australia. The layering of activities generated by the Power of 10+ model ensures that no single type of use or user dominates the space. (Source: Project for Public Spaces, n.d. retrieved: 2018)

2.5 Best Practice - People design:

This section will outline a number of best practice ‘people design’ components that should be considered when trying to develop successful public space. The term ‘people design’ focuses on principles such as present population, pedestrian friendly, stay time and walk speed, diversity, and interaction. Unlike the more physical design components that will be outlined later, these typically focus on how people use and interact within space. These components were identified based on their prevalence throughout the field of literature.

2.5.1 Present population

A public space is not a ‘public space’ if there is no one present within it (Carmona, 2010). Without the presence of people, a public space will always fail. One of the first things that indicate good public space design is that it is full of people. The number of users within a space is dependent on and reflective of the success of the other design components. Therefore, the amount of people within the space is the arguably simplest and most effective evaluation

of the overall success of the public space (Gehl and Svarre, 2013). Cooper Marcus and Francis (1997) explain in their summarised design principles that a ‘people place’ should ensure there is a balance of public space that promotes social wellbeing or recreation, as well as offering the space as a physically designed art piece. Without this balance, the space is generally flawed and unsuccessful. In Gehl’s report of the revitalisation of central city Christchurch, New Zealand, he explained that “putting people first, should be the core principle of any planning process” (A City for People Action Plan, Christchurch, 2010). Additionally, ensuring that multiple aspects and variety of the space is used is also important (Gehl, 2010). For a space to feel truly vibrant and attractive, it needs to provide for as many groups and uses as possible, for it is the layering of these activities and subgroups that result in bringing a public space to life (Gehl, 2010; Project for Public Space, n.d.).

2.5.2 Pedestrian friendly

As discussed above, as the focus moved away from people planning in cities, the emphasis on the vehicle use and the subsequent urban restructure of cities became the dominant mode of city planning. (Carmona, 2010; Gehl, 2010; Jacobs, 1961). However, over the most recent decades many planners and designers have returned to the idea of ‘people planning’ and are again beginning to focus on planning environments suited to the comfort of pedestrians (Carmona, 2010). Marcus and Francis’ (1997) book, *People Places: Design Guidelines for Urban Open Space*, was one of the earlier successful pieces that focussed in detail how to successfully design spaces as ‘people places,’ while further work from Gehl (2010) emphasised creating *Cities for People* and planning in the ‘human dimension’. Included in these design strategies, goals, and guidelines is the desire to create cities that are pedestrian friendly. While there is a vast array of methods and opportunities to achieve a pedestrian friendly city, the ultimate goal is to encourage more users to utilise space and streets, which would lead to numerous benefits to the city and its people.

Re-recognition of planning for more ‘walkable’ cities has since surfaced. Forsyth and Southworth (2008:1) believe that being walkable is the core “foundation for the sustainable city”. Pedestrianised areas have significant benefits for safety, health, economy, recreation, the environment and numerous other elements (Forsyth and Southworth, 2008; Jacobs, 1961; Kumar and Ross, 2006). The most significant barrier to creating pedestrian friendly spaces is high traffic flows, which upsets the “human pace” that encompasses the flow and walkability of pedestrians (Gehl, 2009). There are many examples of where methods of pedestrianisation

or ‘traffic calming’ have significantly benefitted cities. Traffic calming (the process of slowing vehicle speeds and sometimes reducing vehicle access) throughout the UK saw a drop in vehicle related accidents by 60%, while incidents for cyclists (especially children cyclists) dropped by 48% (Kumar and Ross, 2006). Furthermore, safety improvements in similar developments throughout the Netherlands led to an 80% decrease in accidents (Schlabach, 1997), while pedestrianisation projects throughout Copenhagen have continually improved and transformed the city (Jensen, 1999). Improved safety is just one of the benefits, there are also many economic and health related benefits resulting from pedestrianisation projects. For example, a study in Khao San Road, Bangkok indicated a 47% increase in sales after recent pedestrianisation (Kumar and Ross, 2006).

2.5.3 Stay time and walking speed

The amount of time that people stay in a public space, along with the speed in which people walk through a space, are two components that Gehl prioritises as aspects of good design in his studies (Gehl, 2010; Gehl, 2013; Gehl and Svarre, 2013). He states that essentially “longer stays means lively cities... A good city can be recognised by the many people not walking” (Gehl, 2010). Therefore, how long people stay or walk through a space is indicative of its quality as it can usually reflect whether a place is considered worthy of staying in or not (Gehl, 2013; Gehl and Svarre, 2013). One of Gehl’s most unique ideas is that if people are walking at a ‘5km/h speed’ then they are enjoying the quality of the space. Therefore, this also allows people’s walking speed to be indicative of the quality of a public space. For example, a study in Strøget, Copenhagen, showed that pedestrian traffic would move 35% faster on a cold winter day compared to a warmer day in summer (Gehl, 2013). Though weather is an uncontrollable variable, it still reveals that people are more likely to walk slower when the surrounding space is more desirable and vice versa. Additionally, people should be able to enjoy the space at their own leisure. This means that pedestrians can temporarily stop or wander and interact or enjoy the space without being interrupted, or pushed and shoved around (Gehl, 2013).

2.5.4 Diversity

Public space is supposed to be democratic, accessible, and inviting for everyone. Creating public spaces that provides for all types of uses and users is critical to a successful and socially sustainable city (Bromley *et al.*, 2007; Carroll *et al.*, 2017; Gehl and Svarre, 2013; Freeman and Tranter, 2013, Mitchell, 2003). It is commonly recognised that often the most important groups to consider in developing a public space are elderly, children, and disabled people as

they are commonly excluded in the development process (Cooper Marcus and Francis, 1997, Freeman and Tranter, 2013). While these are certainly critical groups to consider in design, it is also important to think of diversity as more than just age groups and disabled groups, but also just as critically – to recognise the many subgroups of different type of space users. One of the public space design principles that Cooper Marcus and Francis (1997) developed was to ensure that every public space where possible should “encourage use by different subgroups of the likely user population”. Furthermore, one of the most significant principles of the Power of 10+ is to ensure that public space has multiple layers of uses and users ultimately resulting in a more rich, attractive, and vibrant place (Project for Public Spaces, 2018). These subgroups may include skateboarders, cyclists, runners, mothers with young children, tourists and numerous others. If there is a variety of these subgroups present within a space then it is likely that it has been relatively successful in one sense or another (Cooper Marcus and Francis, 1997).

This by no means undervalues the importance of inclusively planning for children, elderly, and disabled people throughout public space however. Firstly, children are a particularly important group that have recently gained more attention in relation to becoming more inclusive to design of public spaces (Carroll *et al.*, 2017; Freeman and Tranter, 2011; Gehl and Svarre, 2013). Freeman and Tranter (2013:93) regarding public space in the city centre, explained that:

City centres that are open and welcoming of children, where children are clearly visible, and that have children’s welfare at heart spread this sense of children’s centrality out beyond the city core into the neighbourhoods and into the wider public life of the city.

They also explain that the physical design of public spaces is important when attempting to create attractive environments for children. Features such as fountains, public art, sculptures, and playgrounds or similar structures are important to attract children to use and interact in a space; adding further social enrichment (Freeman and Tranter, 2013).

Designing spaces for elderly and disabled people is also as critical. Many authors have explained that including and providing access for these groups is a critical component of good public space design (Bromley *et al.* 2007; Cooper Marcus and Francis, 1997; Gehl, 2013). Bromley *et al.* (2007) explain that over the past two decades, western cities have taken the

opportunity to focus on improving access to public spaces such as in city centres. They explain that there are increasing opportunities throughout regeneration and redesign projects to create better access for those in wheelchairs, or other means of impairment, that are beginning to be utilised. In Christchurch's: *A City Plan for People Action Plan* (2010), it was identified that the central city had in the past struggled with attracting children and elderly, and has since become an important development goal. Overall, those public spaces that invite and facilitate use for all groups of societies are widely considered to be the most successful.

2.5.5 Interaction with the environment and other people

One of the key principles of the Power of 10+ design concept is the importance of enabling communities to interact and enjoy public spaces together (Project for Public Space, n.d.). The Project for Public Places in their article *What Makes a Successful Place?* Provide a simple and effective explanation of a common theme discussed in literature. They state that: "Activities are the basic building blocks of a place. Having something to do gives people a reason to come to a place – and return. When there is nothing to do, a space will be empty and that generally means that something is wrong." Activity and 'social exchange' has historically been one of the most crucial components of what makes a public space work in the past (Carr *et al.*, 1992). Arguably as the importance of public space has becomes less (Goheen, 1998; Senett, 1992) and the associated ability to attract people to a space has become more difficult (Gehl, 2010), the amount of interaction within a space can be a key indicator of how well a public space is working.

There are a variety of ways and considerations that can be made to understand interaction within a public space. One concept developed by Gehl (2010) is the three types of activities, which are necessary, optional, and social activities. The idea behind this concept is that while necessary activities occur throughout most spaces under any conditions (e.g. walking to work, transporting goods), optional and social activities only occur when they are enabled by good public space conditions. People need quality space that supports optional activities, which could be achieved through numerous means. One example is by enabling small events (such as creating areas for crowds to appreciate local musicians), or simply by establishing interesting, interactive features (such as public art or group activities). Out of these optional activities emerge social activities, as people begin to share experiences which help facilitate interactions with one another. Gehl uses William Whyte's term 'triangulation', which occurs when two or more individuals or groups interact due to sharing involvement in an activity. In summary,

enabling interaction is critical to creating a good public space, and by enabling events, amenities, and other interactive features it allows all groups of people such as children, elderly and all sub-users to share experiences within a public space together (Carr *et al.*, 1992; Freeman and Tranter, 2013; Gehl, 2010; Project for Public Space).

2.6 Best Practice – Physical design:

This section, just like the previous section, will outline a number of best practice components that lead to the creation of successful public space. However, this section will focus on the more physical design related components, rather than people design components. The physical design components identified as best practice principles in public space design are the integration of green space and environmental connections, safety, innovation, vision and access, and amenities. Just like the previous section, these components were identified based on their prevalence throughout the field of literature.

2.6.1 Green spaces and environmental connection

Most public space researchers will refer to the importance of the role of the natural environment in helping shape a successful public space, whether it is done intentionally or indirectly (Carr *et al.*, 1992; Chiesura 2004; Cooper Marcus and Francis, 1997). For example, Carr *et al.* (1992) explained that in the early 1990s many cities began to understand the importance of reclaiming ‘old industrial waterfronts’ or creating ‘urban wildlands’ by opening unused green areas into accessible areas for potential users. He explained that the role of water is an experience itself within a public space, it can singlehandedly attract users to visit a public space regardless of its other attributes. Similarly, greenery is obviously a well understood benefit and desire for public spaces throughout cities. Chiesura (2004) explained that while small scale green areas in cities have numerous benefits for people, they are often overlooked by designers. Therefore, more emphasis needs to be placed on integrating nature into spaces near where people live and work. This is important for central city public space, because these are generally areas of high density work places. During a study of a downtown plaza in Chicago, Cooper Marcus and Francis (1997) found when public space users were asked how they would modify or change the plaza, the third top response was to add more greenery (15% of people).

2.6.2 Safety

Safety is a concept that is difficult to encapsulate in a simple evaluative tool. Some consider safety as the first concern for public spaces (Mehta, 2014). It is important to identify and understand why safety is a critical component of popularity and success of a public space, especially when the notion of ‘safety’ may be considered in a significantly different perspective from one city to another. For example, a study by Gehl and Svarre (2013) explained that for optimal safety, the desired ratio of men to women in a public space, would be 48% to 52% respectively to reflect local demographic. This would mean that Bryant Park, New York City (the case study in this scenario) could be considered safe as women feel comfortable visiting the space. The Netherlands has significantly different safety concerns than in the previous scenario in New York. The key safety developments for many public spaces in the Netherlands were implementing traffic restrictions or ‘traffic calming’ in their cities. Doing so helped decrease vehicle related accident rates by 80% (Schlabach, 1997).

With the rise of shared space as a popular public space design, pedestrian road safety is always a key concern in every city. Hamilton-Baillie (2008) and Kaparias and Mount (2012) explain that one of key components of successful spaces is that these public space environments are more pedestrian friendly. In a publication by the Ministry of Transport in 2016, it was reported that there were 25 pedestrian deaths, 257 serious injuries, and 575 minor injuries in police reported crashes throughout New Zealand. Though the amount of accidents has slowly been declining, pedestrian safety as well as all traffic related safety has always been a concern throughout New Zealand. Pedestrian safety in and around public spaces and should therefore be considered as safety factor. Another popular safety consideration throughout most spaces is ensuring that it has adequate lighting during night hours. How lit a space is can determine whether people will feel safe or not, and therefore use the space or avoid it (Cooper Marcus and Francis, 1997). In summary, the argument is that measuring or evaluating safety in a public space is completely dependent on the nature of the space and its context in the city as proven through the various examples above.

2.6.3 Innovative and exciting public spaces

Often research will explain that for public spaces to be successful, they need to “be beautiful and engaging on both the outside and the inside” (Cooper Marcus and Francis. 1997:9). Gehl (2013) explains that one of the key challenges for planners in the public space field is ensuring that a space is designed in a way that it will attract multiple groups and in turn, make the place

more ‘alive’. ‘Innovation’ within a public space can come in all different sizes and forms. Often all that is needed is a reconsideration of the current design or the addition of amenities, but sometimes a new space needs to be redeveloped completely with a more appropriate purpose (Gehl, 2013). The following examples show how making a public space more innovative or exciting can improve it as a ‘people place’, whether that is through minimal additions or changes, or by completely redeveloping a space.

There are many ways in which you can improve a space to be more attractive. Most of the time only small changes or additions are required and can make the biggest differences to how a public space is used and perceived (Gehl, 2013). Examples of this include Plan NYC’s (2007) lively, safe, sustainable and healthy city goals, which led to significant public space improvements seen through simple sidewalk widening, adding bicycle paths, and creating shared streets. Other improvements to city life were seen in Melbourne, Australia where from 1993 to 2004 central city use and perception dramatically improved with the addition of Federation Square, where newly renovated seating arrangements, passages, and wider sidewalks saw people staying for significantly longer, and in larger quantities (Gehl, 2013). Another approach to create more exciting and attractive spaces is by adapting a seasonal strategy. (Project for Public Space, 2005). For example, a holiday market in Union Square, New York evolved an under-used space into a vibrant community space where activities could be enjoyed by all types of users (Urbanspace NYC, n.d.). This meant that an unused cold winter space, quickly became one of the most attractive public spaces for all users within the community.



Figure 3. *Holiday market in Union Square, New York City. (Photo from Project for Public Space, 2005).*

Because a seasonal strategy is not always realistic or a priority for many cities, simple strokes of creativity can be still incredibly effective in public spaces. This could mean adding simple amenities such as bean bags on an otherwise empty grass patch in the summer, or a simple interactive light or other art feature at night. Just as features such as interactive public art and manipulative fountains, are exciting and attractive for children (Freeman and Tranter, 2013), they are also features that help create a more inviting and interesting public space for all users (Cooper Marcus and Francis, 1997). One design principle for innovative spaces is that it should “incorporate components that users can manipulate or change, such as interactive fountains or sculptures” (Cooper Marcus and Francis, 1997:10). By taking advantage of many of the above opportunities, a space will continue to add layers of reason to visit and use the space and attract a diverse range of users (Project for Public Spaces, n.d.). Of course, more extreme examples of creating innovative public spaces exist across the world.

A more recent development in New York City was the development and regeneration of the old abandoned highline railway system across Manhattan. This community led development of innovative ecological public space now runs nearly one and a half miles long and facilitates

multiple user groups from recreational users to commuters, artists, and markets (Friends of the Highline, 2015).



Figure 4. *Public space users enjoy the redeveloped highline overbridging the streets of New York City (Source: Author).*

2.6.4 Vision and Access

Pasaogullari and Doratli (2004) believe that access and the subsequent use of public spaces are two of the most significant issues in urban planning in today's cities. They have concerns that these aspects are continually ignored as they are 'neglected in urban planning and development processes'. Public spaces should be integrated into the urban environment, as the location of the space can determine whether a space will be empty or not. Obviously if there is no existing - or a limited population nearby, then it is unlikely the space will be used to its full capacity (Pasaogullari and Doratli (2004). This is however unlikely a factor when only considering central city public spaces due to the nature of their location. More important is its visual and physical access to the space. Cooper Marcus and Francis (1997) explained that a space must be visible and functionally accessible. They prioritise the importance of ensuring that there is

a connection to adjacent sidewalks and that the more connections the space has to the surrounding landscape, the better, as pedestrians feel that this creates more of a right of way.

Talen (2000) explained that local streets and the presence of sidewalks encourages use of the space, and can break down the barriers between private and public areas. Furthermore, Cooper Marcus and Francis (1997) explain that for a public space to be successful, it must be visible from both a long and short distance as well as ensuring there is clear visibility between the space and its connecting streets. Additionally, it is important that the areas are visible and accessible for the whole range of potential users. Pasaogullari and Doratli (2004) in their study investigated and measured accessibility and utilisation of public space in Famagusta, Cyprus by surveying the amount of people that can see a public space from their house as a means of success. Although this type of survey would unlikely be less useful in central city spaces, due to its less residential nature, the study still emphasises that having visible public spaces is an important component of creating successful spaces.

2.6.5 Amenities

Amenities are important for attracting users to a public space as well as adding to the overall utilisation and comfort within the area (Carr *et al.*, 1992; Project for Public Space, 2005). A public space with integrated amenities can offer a greater sense of attraction, utilisation, and interaction, which can help develop a greater sense of vibrancy, socialisation, and community. They are important in enabling the ‘optional and social activities’ that were discussed earlier regarding interaction, further adding to the sense of community and socialisation (Gehl, 2010). Amenities may include seating, tables, public art and sculptures, fountains, gardens, public bathrooms, and a numerous range of other physical and natural features. Though not all these listed amenities are required, generally having multiple components will make it easier to activate, invigorate, and define a public space and help achieve success. In Cooper Marcus and Francis’ (1997) successful design principles for a people place, they determined that it is important that a space should ‘be furnished to support the most likely and desirable activities.’ Therefore, the importance of providing good amenities is heavily linked with the utilisation and activities within public space. Additionally, a variety of amenities can help promote a space to multiple user groups. Public art, or manipulative fountains or similar features can be a great asset for children as well as other sub-groups of users (Freeman and Tranter, 2013; Project for Public Space, 2005).

Furthermore, seating is one of the most critical and therefore a common amenity within a central city public space. In a study in Stockholm, Sweden, an assessment of quality of seating was carried out in attempt to understand the most important components of good seating in a public space (Gehl, 2010). The study found that what was most important for public space success in this scenario was a pleasant microclimate, appropriate positioning of seats (around the edges of the space with your back covered was considered the most appropriate), good views of the space or surroundings - especially if the space offered attractive features natural features (e.g. trees, water, flowers), and exciting architecture or art. A peaceful setting with limited noise was also considered a significant component (Gehl, 2010). The seating itself is also important, ensuring that is practical for all users (especially elderly) and designing seating so that it can enable groups of people to sit together can make a notable difference to a spaces success (Gehl, 2010; Cooper Marcus and Francis, 1997). While unorthodox seating arrangements such as concrete steps, or benches offer a diverse range of seating options for many users, other users often prefer comfortable seats with backs rather than cold concrete benches. (Cooper Marcus and Francis, 1997). It is therefore important to consider more sensitive groups such as elderly in design choices, as they may not be willing or able to sit in a space if only uncomfortable and unpractical seating options are available.

2.7 Public space ‘other’ design concepts

The following considerations focus on other design components that weren’t included in the previous sections. Mainly focussing around the physical design of a public space rather than the components of a good human dimension, these are components that are typically considered prior to and during development (although these are still flexible), rather than focussed on the more intangible human dimension of the space. However, these design concepts are just as critical for creating successful people places. The components identified as important public space physical design considerations throughout this section are: shared spaces, edge effects, and image and identity.

2.7.1 Shared space

As considered earlier in relation to creating to more pedestrian friendly public spaces, creating ‘shared space’ has become a more popular and recent development strategy throughout many central cities. Kaparias *et al.* (2012:297) explain that:

shared space is an approach to improving streets and places where both pedestrians and vehicles are present, with layouts related more to the pedestrian scale and with features encouraging drivers to assume priority having been reduced or removed.

The aim of shared spaces is therefore to promote pedestrian activity and wellbeing, while continuing to allow vehicular access but also importantly, removing the perceived dominance that has commonly surrounded this dominant transport method (Hamilton-Baillie, 2008; Kaparias *et al.*, 2012). Shared space developments have become popular developments throughout many cities recently as they have displayed a variety of benefits for safety, health, traffic capacity, and economic vitality (Hamilton-Baillie, 2008, Project for Public Spaces, n.d.). Pedestrians who use these spaces tend to feel significantly more comfortable with fewer vehicles, but also because these spaces often make drivers feel uneasy as they have to be more aware and alert of their surroundings (Kaparias *et al.*, 2012). Shared space developments are a welcomed development for this new emphasis on ‘people places’ and the ‘human dimension’ as they confront the dominance of high density traffic flowing cities.

2.7.2 Edge effect

The concept of a public space having edges of surrounding buildings that shape and add to the space by inviting activity has been a concept in discussion for many years now (Carr *et al.*, 1992; Carmona *et al.*, 2012). The idea of ‘edges’ being important in city spaces was popularised by Gehl in *Life Between Buildings: Using Public Space* (1987). The concept of city edges can be compared to the walls of a home - the edges of a city help define a place and contribute to the overall experience and vibrancy of the place, as well as promoting comfort and security (Gehl, 2010; Gehl, 2011). This effect becomes particularly noticeable when you compare sites heavily surrounded by traffic flows, to those encapsulated in quality space edges. Gehl (2013) also adds that good edges can and should ‘appeal to many senses’, offer a combination of functions, add additional detail and vibrancy to a space, and add greater transparency from inside to outside. As well as the edge effect, the importance of a linked pedestrian system is critical to creating successful space. It is common for cities to have a ‘pedestrian network’, where people will regularly be passing through (Gehl, 2011; Heng and Chan, 2000). The reasons for this could be because the location is close to public transport, or parking, or because the space is situated on or between a popular location(s) (such as work buildings or shopping centres). Spaces ‘tap’ into pedestrian networks and use them to their advantage. Spaces such

as squares, parks, and plazas will often witness an increase of users as well as an influx of pedestrians passing through (Heng and Chan, 2000).

2.7.3 Image and Identity

Many researchers believe that one of the key components of a city square or plaza is that it reflects the surrounding image and identity of the town or city (Carr *et al.*, 1992; Project for Public Space, 2005; Ministry for the Environment, n.d.) For example, in the Ministry for the Environment's *Key Urban Design Qualities* they establish a concept called 'The seven Cs' in which two of these are 'context' and 'character'. They believe that public spaces should be appropriate to their location as well as reflect national and local culture. They should also incorporate features such as heritage or landscapes into the space, as together this helps increase community value as well as additional benefits such as tourism and investment into the space. The Project for Public Spaces (2005) in their article *10 Principles for Successful Squares* highlights that it is common for the centre city square or plaza to be the most significant place in the city and therefore reflective of the city and community as a whole.

2.8 Weather, climate, and unexpected events

Weather, despite its unpredictability, can be considered a design aspect of a central city public space. In Cooper Marcus and Francis' (1997) design principles, they believe that a space should be designed in unison with the local climate within the identified environment. As obvious as it seems, people like to sit and interact in an environment that is positioned in the sun, rather than in shade (though the opposite may occur in other areas where shade is desirable for relief from high temperatures and harsh sunlight). Many spaces lack this advantage, which can have significant repercussions for its overall use (Gehl, 2010). Though the climate isn't a physical component of public space design, it is a critical parameter that can determine the functionality of a site. Obviously, if it is raining or windy, naturally there will be less people present and vice versa if it is a warm, sunny, and calm day. Gehl and Svarre (2013) raise an important point in that you must schedule study times carefully around sensitive events, for example: even if wet weather has cleared up, you should consider the post-implications such as wet seats, or wet grass spaces for example. It is also important that the space remains comfortable especially during peak-use times. For example, people generally like quiet places to sit, if there is nearby construction or similar noisy events, it can deter people away from what they enjoy about the site (Gehl, 2010).

2.9 Past and present methods

Because the field of urban design is well established, there are many types of guidelines that set out design principles for good public space design (for example Gehl and Svarre, 2013; Cooper Marcus and Francis, 1997; Montgomery, 2007; Project for Public Space, n.d). There are two considerations that need to be made when discussing successful methodologies. One is that, while several well accepted and applicable methodologies exist, they are often comprehensive and in depth, requiring significant investment from anyone wanting to use them. The other consideration is that it can become difficult to apply these design principles into practice when they do not offer detailed methodologies. Mehta (2013:53) recently stated that “few comprehensive instruments exist to measure the quality of public space”. While this is true, it seems that also an issue is that few simple instruments exist to measure the quality of public space. Using an example from Cooper Marcus and Francis (1997:9) public space design principles, they state that “a people place should provide a feeling of security and safety to would-be users”. While the purpose of their design principles is not intended to develop a methodology, the issue in the urban design field of literature is how would someone in practice measure these outlined desired design principles.

Therefore, as well as there being few comprehensive tools available (Mehta, 2014) there is also limited research surrounding the creation of a simple and practical tool that everyday professionals (such as urban designers, landscape architects, and planners) or researchers could apply to a public space to efficiently assess its quality and success. Fortunately, there are some instruments available, many of the examples of methods below have been taken from studies conducted by Gehl in association with other researchers (Gehl, 2011; Gehl, 2013; Gehl and Svarre, 2013). Gehl’s vast experience in evaluating public space means his methods tend to be some of the most commonly accepted ways to measure public space. However, as with other research, some of the methods employed require comprehensive analysis of single sites at a time, multiple times, in many separate scenarios (from time of day, to season of the year). This can make it difficult when trying to evaluate a public space in a limited period.

It is still important to consider the methods and techniques employed by the likes of Gehl however. One important point he makes is that:

every city is unique, and observers must use their eyes, other senses and good common sense. Most important is that the context and site determine the methods and tools, and on the whole, how and when the study should be conducted (Gehl and Svarre, 2013, p. 11).

This perhaps offers an explanation into why no simple tools or methodologies to measure public space exist, as they are likely dependent on the scenario and place. Furthermore, they explain that studying any public site is difficult due to their complex nature. From complicated considerations of diversity and random activities and events, and mixed purposes of individuals such as recreational users, to day to day users (all of which are altering at different times of the day and week), measuring a public space becomes “complex, over-lapping and not easy to study” (Gehl and Svarre, 2013:11).

Other considerations that are covered throughout *How to Study Public Life* (Gehl and Svarre, 2013) are understanding that quantitative data can be used effectively to measure successfulness of public space, such as by counting users over time within a space, or measuring their walking speed. Quantitative data allows for stronger arguments, which is particularly important in the decision-making process (Gehl and Svarre, 2013). Secondly, they state that multiple counts or measurements should be recorded to allow for comparison between places, as well as between different times of the day, week, and season. The final consideration is that unexpected events, and ‘factual conditions’ including weather, or the time of day need to be recorded to allow for consistency, comparison, and longevity of future studies.

2.10 Conclusion

The purpose of this literature review was to establish an in depth understanding of the current field of literature surrounding the current status of public space. It also identified a number of best practice considerations surrounding how to establish successful public space. Population, ratio of used space, stay time and walk speed, diversity, and interaction, were identified as important people based considerations of public space. While green/environmental, safety, innovation, vision and accessibility, and amenities were determined as vital design based considerations for creating successful public space. Also identified were a number of other public space design concepts such as shared spaces, edge effects, and the importance of image and identity. Finally, this chapter overviewed a variety of existing methodologies that have

been used to evaluate public space. Taking all of these findings into consideration is critical for developing an effective methodology to carry out this research. The following chapter will outline the methods and explain how these various best practice principles were used to create the Public Space Evaluation Tool.

Chapter 3 - Methods

3.1 Introduction

To explore the adequacy and success of New Zealand central city public space (CCPS) and to answer the three research questions, a mixed methods research approach was adopted. This chapter will outline each of the methods in detail, including how and why they were used, as well as explain how the 12 evaluated public spaces across the three case study cities were selected. It will first discuss the research approach adopted for this research and then the secondary methods that were used to support the primary research methods. It will explain primary research methods, particularly the Public Space Evaluation Tool (PSET), how it was established and used, as well as overviewing the key informant interview process. It will also consider the limitations and ethical considerations that were required throughout the research process.

3.1.1 Research approach

The mixed methods approach entailed a combination of quantitative data and qualitative data. Quantitative data was obtained through the Public Space Evaluation Tool (PSET) and qualitative data was obtained through key informant interviews. The intentions were for quantitative data to provide the primary data findings, while the qualitative data would be used as supplementary information to further validate the main findings. However, the qualitative data was found to offer additional key insights into the research that were not established through the primary quantitative methods. Quantitative methods have been used in many ways in public realm research, Gehl and Svarre (2013) explained how quantitative data offers more definitive results that are more easily used to develop arguments. While qualitative methods can often be considered as ‘soft’ and ‘subjective’ and more of a supplement compared to qualitative methods, as explained by Winchester and Rofe (2010). While this was somewhat the intention with qualitative data in this research, it is also important to understand how it can, and how it did, offer additional depth particularly in scenarios that are more difficult to understand (Winchester and Rofe, 2010). Therefore, both the quantitative and qualitative data were used to both effectively supplement each other as well as offer further understanding.

Part of the research design was based around using three New Zealand case study cities. According to Baxter (2010) case studies are an effective research method to understand the bigger picture, while offering in depth analysis of a particular area of the overall research. To

allow for a more consistent research design and comparable results, four public spaces within each of the three case study cities: Wellington, Christchurch, and Dunedin were selected. Each space was determined under one of four categories: A water based space (either situated on the harbour side or riverside), a city square, a pedestrianised street or shared space, and a recently redeveloped space. This allowed for a more objective research approach by identifying spaces that were similar and therefore more comparable between cities. It also provided enhanced opportunities for more effective analysis with a more defined research scope.

3.2 Secondary Research

3.2.1 Literature review

Establishing a literature review was a critical component of the research process. A literature review was required to understand the existing relevant field of research, as well as the best practice principles that should be considered when creating a tool that measures central city public space (CCPS). The literature review provided an overview of theoretical knowledge surrounding concepts of the public realm and the role of public space throughout history and in modern society. It helped develop an understanding of why public space is a worthy research topic and how it has been researched in the past. It is important to understand the vast perspectives and critiques that are present in the current body of literature when much of the research approach is reliant on methods based on best practice (namely the PSET).

3.2.2 Analysis of local planning frameworks

An analysis of local planning frameworks was conducted to better understand the local context of the individual case study cities and individual public spaces and was therefore overviewed in the context chapter (Chapter 4). This process mainly involved reviewing the most significant plans, strategies, and reports that addressed public space development in each of the cities. Wellington, Christchurch, and Dunedin, had their own central city plans, or urban growth plans that identified the key development strategies and challenges moving forward. Additionally, reports conducted throughout these cities by urban design or architect consultancies (as well as through local government programmes), offered insightful information and context across the three case study cities and their public spaces. Reviewing these various documents allowed for a significantly better understanding of local contexts throughout the research process, and allowed for more focused and objective research and analysis of results.

3.3 Primary Research: Public Space Evaluation Tool

3.3.1 Data Collection

The PSET was the most integral part of the research design and was used for obtaining most of the results. It was used to evaluate public space (by collecting data) consistently across all three of the case study cities during both weekdays and weekends, three times a day. At each public space, snapshots were taken with a camera every two minutes, over a ten-minute period (for a total of five snapshots). Taking five photos over a ten-minute period allowed for effective comparisons of how people used space over time and was critical to effectively scoring many of the PSET components discussed below. It also meant that if some scores were unable to be recorded over the short ten-minute period, or there was uncertainty with the determined score, each point in time could be returned to. All photos were taken from the same location within each public space. This process was repeated three times for each public space throughout a weekday and a weekend day at prescribed times:

- Morning: Between 10am-11am
- Midday: Between 12pm-1:30pm
- Evening: Between 5pm-6pm

The prescribed times allowed for enough time to collect data for each time period across all four public spaces throughout the three case study cities. During each ten-minute period (between the photographing process), many of the space components were scored with the PSET template (which is explained later), though some components relied on reviewing the photos before finalising a score.

These prescribed times were selected as they represent different times of the day where different activity or routine events may occur. The morning period typically recorded early periods of the day when people were at work during the weekday. The midday period aimed to represent use of the public spaces during lunchtime. The evening period aimed to evaluate spaces when people were on their way home from work. Ten-minute periods were considered an optimal and efficient amount of time to capture the general use of the public space during that time and represent typical flows, uses, and tendencies of users throughout the space. Additionally, any uncontrollable events (e.g. infrequent markets, festivals, construction or service work) were avoided as much as possible (though recorded if present) during data collection.

3.3.2 Weather and other uncontrollable variables

Similar to ensuring that atypical events did not skew results, ensuring that consistent weather conditions were present across all public space evaluations was critical. Research was conducted throughout the months of May-June, which is part of the winter season in New Zealand. As a result, temperatures were cold and sun light and amount of day light throughout the day was reduced. Regardless, all evaluations were carried out under consistent weather conditions (generally sunny and not raining), with an exception of the weekday period during Wellington evaluations. Slightly reduced temperatures and cloudier conditions were recorded during the weekday in Wellington, although the implications for the results was considered to be minimal - but nonetheless, noteworthy. Other uncontrollable variables had to be recorded as well. A common variable that likely impacted the way that public spaces were used during the day was construction works. Christchurch was the most impacted by considerable construction works across many of the evaluated public spaces, while Civic Square in Wellington also had construction works present in the weekday. More specific detail about each individual space is recorded in the results chapter.

3.3.3 Public Space Evaluation Tool (PSET) evaluation framework

The PSET was constructed through an analysis of best practice principles for creating successful public space as determined by the most highly cited literature. The development of the literature review in the previous chapter was used to identify ten key components that commonly determine the success of public space. By doing so, each space across all three case study cities could be objectively measured, evaluated, and compared. A framework was created as a point of reference throughout the data collection process, it outlines what each of the ten components are and how to score each of them. The PSET framework offers a final score and a score for each of the individual components (a maximum score out of 5 for each component), so that they can be evaluated with the quantitative data allowing for more effective analysis and comparison of each space and city.

Table 1. *Public Space Evaluation Tool (PSET) framework used for public space evaluation observations of central city public space*

Criteria	Possible Score	Method
People Components		
Present Population	5	How many people are present within the vicinity of the specified space? 0 = 0 1 = 5-15 2 = 15-25 3 = 25-35 4 = 35-50 5 = 50+
Ratio of used space	5	How much of the available space is being used/covered? 0 = None 1 = Only minimal areas of the space 3 = Moderate use of whole space 5 = Almost whole space in use
Stay time and walking speed	5	Are people still present after each time set? 0 = No one staying between each time set, and people are walking purposefully from a to b 5 = Almost all users staying between each time set and people make regular stops or walk very leisurely
Diversity	5	Is there a diverse proportion of genders, children, elderly, as well as wide range of specific users? (e.g. cyclists, skateboarders, dog walkers, runners, street performers) Does the space allow access for the physically impaired? 0 = low diversity (Low amount of above category) 5 = high diversity from above category present.
Interaction with other users and environment	5	What proportion of people are interacting with others (individuals or groups), as well as with the environment? 0 = no one interacting 5 = significant interaction between individuals/groups and with environmental features.
Total (/25)		
Design Components		
Green and environmental connection	5	How much green/environmental cover and features are present? (e.g. proportion of grass cover, trees, water, gardens) 0 = none of these are present 5 = high variety and cover
Safety (Pedestrian Friendly)	5	Is the space well-lit and open, safe intersections, no traffic interference, pedestrian friendly, diversity of men and women? 0 = none of these are met

		5 = almost all of these criteria are met
Innovation/creativity	5	Is space design creative and innovative? e.g. are there multiple attractions and interactive features (fountains, art, activities), regular events etc. 0 = Not innovative and little to no creativity or exciting features 5 = Innovative (includes most or all of above categories)
Vision and Accessibility (sightlines, entrances, vision/obstruction)	5	Is the space visible/exposed from surrounding areas? Are their multiple entrances/sidewalks connecting to it? Is the space open, or does it have obstructed views? 0 = None of these criteria are met 5 = All or almost all criteria are met.
Amenities (seats, tables, recreational features, other features)	5	Are there enough amenities to facilitate activities (especially well positioned seating)? Do amenities support 'optional activities'? Are all members of the public provided for by amenities (e.g. seating for old people, activities/objects/structures for children?) 0 = None of these criteria are met 5 = All or almost all criteria are met.
Total (/25)		

As shown in the PSET framework in Table 1 there are ten total components, five of which are determined as 'people components' (or 'people scores'), while the other five are considered 'design components' (or 'design scores'). The people components focus more on the evaluation of users within the space and how they interact, while the design scores are generally more focused on the physical design of the space and what is present. As the framework shows, each of the ten components are scored out of a possible five points, offering a total score out of 50 for each space, as well as a people score and design score out of 25 from their respective five components.

As stated earlier, the ten components were established from best practice as determined from a literature review, research such as that from Cooper Marcus and Francis (1997) and Montgomery (2007) showed how identifying components of public space and essentially creating a checklist, is an effective method of evaluating public space. Therefore, similar methods have been adopted in this research by determining ten components that are most commonly considered as important when evaluating public space. This method has been taken one step further however, by applying a scoring system to create results that offer quantitative, tangible results. As explained in Gehl and Svarre's (2013) book *How to Study Public Life*, they

explained how quantitative data can offer more definitive results when attempting to measure success, as well as it being able to form stronger arguments. While the proposed PSET intends to take some of these discussed concepts a step further, it is important to remember that one of the main goals for the newly developed tool is that it remains simple and efficient, whilst still effective at the same time. The literature review discussed that while many methods exist for measuring certain aspects of public space, they are often too time and resource intensive.

Further interpretation and reasoning for each of the ten determined public space measurement components are outlined below:

- **Present Population** – The five population brackets that offered a score out of five were determined after evaluating all the public spaces, otherwise it was too difficult to pre-determine how many users should offer what score. This could be changed to reflect the populations of the cities that public spaces that are being evaluated.
- **Ratio of used space** – Many researchers explain that population is one of the simplest measures of public space success, but also important is ensuring that all aspects and area of the space is used (Cooper Marcus and Francis, 1997; Gehl and Svarre, 2013).
- **Stay Time and Walk Speed** – A great indicator of whether a space is pedestrian friendly and inviting to stay, measuring both how fast or slow people walk, and how long people stay in a space was a critical indicator for public space success in Gehl's many studies.
- **Diversity** – Public space is supposed to be democratic, accessible, and inviting for everyone (Mitchell, 2003), it is also important to not just consider common categories such as gender, age, or impairment, but also understand the overall dynamic of what types of users are using the public space (e.g. walkers, cyclists, skateboarders, dog walkers, etcetera. (Project for Public Spaces, 2018).
- **Interaction with other users and the environment** – Good public space is a place for people to relax, sit, eat, play, many, and activities, many of which require interaction with other people and the surrounding environment. From the importance of simple social exchange, to the concepts of triangulation (people interacting through the means of an activity) (Whyte, 1956). Measuring what people are doing in a space is therefore critical to understanding its success.
- **Green and environmental** – Especially in the central city, greenspace and other environmental features (particularly water features) can be hard to come by, yet many

argue its critical importance for a successful public space (Carr *et al.*, 1992; Chiesura, 2004; Cooper Marcus and Francis, 1997).

- **Safety** – People will not use public space if it does not feel safe. Whether that is in the form of lighting at night, safety from busy traffic, or a place comfortable for children, it is important to have a good understanding of whether a public space is safe (Mehta, 2014; Schlabbach, 1997).
- **Innovative and exciting** – Public spaces need to offer innovative and exciting drawcards to attract people to use them (Cooper Marcus and Francis, 1997; Gehl, 2013). Spaces can be innovative in a variety of ways, for the sake of the PSET, it includes understanding if there are any creative or innovative features from interactive fountains, or bean bags on a grass patch, to regular events, such as markets, or art displays. It also includes whether a space has been used in a way that is creative and progressive (such as redeveloping a street into a shared or pedestrianised space).
- **Vision and Accessibility** – People will not use a public space if they cannot see it, or they do not feel that can comfortably access them. Many researchers believe that access and visibility of a public space go hand and hand with overall use (Pasaogullari and Doratli, 2004). It is therefore important to create many connections into and throughout the space (Cooper Marcus and Francis, 1997).
- **Amenities** – Having a range of amenities, especially those that are well designed and well positioned is critical if you want people to stay and interact in a space (Gehl, 2013). Checking whether there is good coverage of seating, but also other features from rubbish bins, to physical art displays, or interactive games (such as human chess boards), can make a space much more attractive and successful.

While many of these components are simple, many are considerably harder to measure. The PSET framework above offers a guide on how to score each of these components throughout the research process.

3.3.4 Data transformation and analysis:

Data collected throughout the observation process with the PSET was recorded on a PSET data template as shown below in Table 2. The data was categorised in a way that allowed for easy interpretation and transformation of raw data into various tables and graphs that helped display any key trends or outliers. Many of the tables and graphs were created to cover specific

elements of the research. For example, graphs displayed the differences in aspects such as the overall average scores of the ten different component scores. These were measured across the country, while tables that displayed simple overall total scores, people scores, and design scores (as well as various other elements) helped to breakdown the data into manageable sections. The three research questions of the research were used to categorise what aspects and patterns were displayed through the data so that it could be used to discuss the results in a more objective manner.

Table 2. *Public Space Evaluation Tool data template*

	Place:			Weather:			Random Events:				Total
Time of day	Pop present (5)	Ratio of used space (5)	Stay time & Walk speed (5)	Diversity (5)	Interaction (5)	Green / Environmental (5)	Safety (5)	Innovative (5)	Vision/ Accessi- bility (5)	Amenities (5)	
Example											
10:02											
10:04											
10:06											
10:08											
Total											
12:00											
12:02											
12:04											
12:06											
12:08											
Total											
5:02											
5:04											
5:06											
5:08											
5:10											
Total											
Average											

3.3.5 Limitations

There were some limitations to this research approach with varying levels of significance. One limitation was the restriction of only being able to carry out observations and take snapshots during daylight hours. For obvious reasons, it was impractical to take photos and make observations when it was dark. As a result, late night activity was not observed throughout the research. As well as winter leading to reduced daylight hours, it was another important consideration that may have limited use of public spaces compared to summer. For obvious

reasons, often public spaces are less inviting in the winter so it was important to consider how colder temperatures, less sunlight, and worse weather conditions would impact the overall scores recorded with the PSET. Research from Gehl and Svarre (2013) explained how even specific aspects such as walk speed can change significantly throughout winter and summer (people tend to walk faster through spaces in the winter), therefore the implications of the winter season and the resulting climate is an important aspect to consider throughout the research. This ultimately means that greater use of public spaces would be expected during warmer times of the year.

Another limitation involved the location and nature of using photographs as part of the PSET observation method. Due to the changing physical nature of the public spaces, many snapshots only captured part of the space, potentially missing additional observations. Furthermore, there were limitations concerning the accuracy of aspects such as pedestrian flows and narrow pedestrianised streets (such as New Regent Street in Christchurch, and Cuba Street in Wellington) as they often had fast flowing, varying, pedestrian traffic that was often hard to capture in five photos over a ten minute period. In some cases, obstructions throughout the public spaces impacted visibility, though this was avoided as much as possible.

Antisocial behaviour observed in public spaces was also often a limitation during observations. Intoxicated individuals or groups were occasionally present in the evaluated public spaces, many of which displayed antisocial behaviour causing some users or passers-by to feel pestered or intimidated and therefore deterred them away from entering and using the public space.

3.4 Primary Research: Key Informant Interviews

3.4.1 Data Collection

Dunn (2010) stated that research interviews can be used for a number of reasons. One of those reasons “is to fill a gap in knowledge that other methods, such as observation or the use of census data, are unable to bridge efficaciously” (Dunn, 2010, p.102). Another reason is to better understand the differing or similar opinions that may exist about a particular topic. Both reasons are relevant to the research approach adopted in this thesis; key informant interviews were (as stated earlier) initially used to provide in depth data information to back up primary data findings from the PSET. However, the breadth of information that was obtained from these

interviews offered additional and useful information to the research and helped develop various arguments. Throughout the interview process, most of the opinions, ideas, and concepts that were discussed, were generally met with consensus across all key informants (though some differing opinions existed). This allowed for an overall better understanding of the many complex scenarios that were playing out throughout the three case study cities.

Semi-structured interviews were the desirable approach to the interview process. Dunn (2010) explains that one of the key advantages of semi-structured interviews is that you maintain the advantage of being able to ask prescribed questions, but allow for “flexibility in the way issues are addressed by the informant” (Dunn, 2010, p. 102). A range of five key informants were selected due to their knowledge and relevant profession in the fields of either, planning, urban design, or architecture. Having a wide range of different backgrounds within the constraints of the public realm field allowed for many different aspects to be covered. A list of the interviewed key informants with a brief description of their roles is displayed in Table 3 below.

Table 3. *List of Key Informants and their roles*

Key Informant	Role of Key Informant
Key Informant 1	Urban design manager - Wellington
Key Informant 2	Private consultancy owner (architect and urban designer) - Wellington
Key Informant 3	Regeneration Planner – Christchurch
Key Informant 4	Urban Designer - Christchurch
Key Informant 5	Regeneration Planner/Designer - Christchurch

3.4.2. Data Analysis

All key informant interviews were transcribed and coded. Doing so allowed for more effective reference back to all the information provided by each individual participant. Coding allowed for a simple analysis of the information and highlighted key themes, similarities, and differences that were observed across all interviews. Lockyer (2004) explained that coding essentially helps categorise information received throughout the interview process and therefore makes it easier to identify key themes and understand the vast amount of information.

3.5 Ethical Considerations

Understanding ethical considerations was important throughout the research process, especially during key informant interviews. As part of the approved ethics proposal submitted to the University of Otago Ethics Committee, an information sheet and consent form was provided to all participants undertaking interviews. The information sheets outlined the aims and objectives of the research and outlined that there was the ability to withdraw from any questions or the process if ever necessary. A separate information sheet was also created for the public space evaluation process, in the case that a member of the public was interested or concerned about what it the field research involved. Furthermore, the consent form allowed the participant to select whether they wish to remain anonymous to avoid any uncertainty or discomfort as well as if they permitted interviews to be recorded.

3.6 Conclusion

The mixed methods approach consisting of the development and use of the PSET and support from key informant interview methods, was considered as the best process to conduct the research and ultimately answer the research questions. The PSET was found to be an effective and efficient method of carrying out public space evaluations and provided a large variety of information. Furthermore, key informant interviews were considered as an effective additional method to provide useful support for the primary data and add additional insights about central city public space. This chapter focused on the methods that were used to evaluate public space, the following chapter will discuss in detail the case studies and their individual public spaces in which these methods were employed.

Chapter 4 - Context

4.1 Introduction

The purpose of this chapter is to introduce the context for the three case study cities: Wellington, Christchurch, and Dunedin, as well as each of twelve evaluated public spaces throughout them. It offers an introduction to the results by identifying and discussing many of the key development strategies and plans that currently guide central city public space (CCPS) development within each city. This chapter will briefly explain the background and context of each of the three cities and their four individual public spaces. It will display maps of each city and the locations of the four evaluated public spaces, as well as photos and basic context data for each of the spaces. Most of the information in the space descriptions displayed throughout the chapter has been collected from key informant interviews and the various identified plans and strategies.

4.1.1 City Selection

The three case study cities that were selected were Wellington, Christchurch, and Dunedin. All three of these cities are well known main centres across New Zealand and offer several similarities and differences. These cities were selected due to their perceived differences in public space and overall context. For example, Wellington, the capital city of New Zealand is commonly perceived as one of the country's most successful and happy cities with more quality public space than the others. Much of Wellington is structured around its large waterfront that flows around the central city. Christchurch is unique in the fact that it has been severely affected by the 2010-2011 Earthquakes, and unlike Wellington is notably flatter with little waterfront connection. Dunedin is notably smaller than the two, though like Wellington it offers a similar geography, especially with the presence of a harbour, though Dunedin lacks any sort comprehensive public space development around it.

4.1.2 Public space selection

As outlined in the methods, four public spaces were selected in each city. Each of these four individual spaces were determined based on four categories of public space, so that in each city a water based space, city square, pedestrianised street or shared space, and a redeveloped space were evaluated. The four spaces selected in Wellington were: The Waterfront, Civic Square, Cuba Street, and Glover Park; In Christchurch, the spaces selected were: The Avon River

Terrace, Cathedral Square, Victoria Square, and New Regent Street; and in Dunedin were: The Octagon, Jetty Street, The St. Clair Esplanade, and Castle Street. Throughout each section of this chapter, further elaboration of each city and space along with their locations on maps will be provided.

4.2 Wellington

Key informants explained that large influxes of people from the Greater Wellington Region contribute to notably higher levels of population density in the city centre than Christchurch and Dunedin. As a result, Wellington offers a considerable density of public spaces throughout its central city. One of the key directional tools for public space development in Wellington is the *Wellington Urban Growth Plan 2014-43*. This plan outlines many of the specific requirements of the central city and indicates how public space in the central city is performing. The plan recognises the growing number of people living in the central city as an understanding of the benefits of central living increases. In terms of public space the plan indicates that people have responded positively to the large variety of public space in the central city and that it is safe and accessible. The Urban Growth Plan also outlined that the main concerns revolved around public space exposure to Wellington's weather and the lack of protection that spaces provide from it. This plan places emphasis on the developing strong links between the city and the waterfront areas by establishing a variety of quality pedestrian networks and public spaces throughout the central city.

One report that emphasised the importance of strong pedestrian links from the city to the waterfront was the *City to Waterfront: Public Spaces and Public Life Study* by Gehl Architects in 2004. As part of this plan, extensive research around Wellington occurred in order to evaluate and offer further recommendations to improve CCPS. Wellington has since been focussed on creating an integrated waterfront that establishes strong links between the city and water, upgrading the quality of public space, and creating a more lively city (Gehl Architects, 2004). Overall, throughout observations during field research and through discussions with key informants, Wellington was determined to have considerable amounts of quality public space formed closely along a clear pedestrian network that connected city with the vast waterfront public spaces.

Figure 5 below displays a map of Wellington and the four public spaces. The locations of each space shows that they are closely linked within the central city and it is notable that the spaces are all closely following a direct network from the main streets of Wellington down to the waterfront space.





Figure 5. Map of central city Wellington and the four evaluated public spaces.

The following table is the first of three public space descriptions for the four evaluated spaces in each of the case study cities. The following table displays descriptions for the four Wellington Public Spaces. For each space, it outlines what type of space and what sort of function the space holds. It offers general context of the spaces role and the typical aspects and activities that are commonly present within it. It also establishes any other general information or unique aspects that may stand out in the space.

Table 4. *Wellington Evaluated Space Descriptions*

Wellington Waterfront (Waterside space)	
<p>This is only a segment of the long stretch of public space situated around the water's edge of the harbour. This space offers connections across the waterfront area and to adjacent public spaces situated along the main pedestrian networks that travel into the main streets of Wellington. The space is used as a major walkway space and access route for those migrating across the city. As a result, the space sees high pedestrian flows.</p>	
Civic Square (City Square)	
<p>Civic Square acts as the main city square and is surrounded by many of the cities key public facilities and services, including the Wellington City Council, public library, and art gallery. It acts as a space for recreation and relaxation as well as for demonstrations and events. The square is mainly surrounded by non-active edges (due to surrounding back facing buildings) and a number of access ways into the space. It is also acts as a link between the various public spaces between the central city and waterfront.</p>	

Cuba St (Pedestrianised street)	
<p>Cuba Street is well known as one of the main streets of Wellington. Completely pedestrianised (apart from intersecting streets), it acts as a key social public space where many of Wellingtons downtown retail and bars, restaurants, and other eateries exist. It includes various amenities; interactive art features and witnesses notably high pedestrian flows due to its nature of being situated on the main pedestrian network that flows to the waterfront.</p>	
Glover Park (Newly redeveloped space)	
<p>Glover Park is a recreational central city plaza and green space that is situated just off the main pedestrian network. Consisting of park landscaping, lots of seating, and a large art sculpture, it is commonly used by those looking for a place to sit and often eat, such as by workers during the weekday, or families in the weekend. Since the release of the Glover Park Management Plan in 2005, several redevelopments and additions have occurred in the public space.</p>	

4.3 Christchurch

The Christchurch setting is vastly different to those of Wellington and Dunedin due to its recent history of the 2010-2011 earthquakes which left much of the central city devastated. As a result, Christchurch has been through a dynamic regeneration process which has led to many changes to the central city, particularly its public space (some of which remains as temporary). Regenerate Christchurch is a central government agency tasked with the regeneration of Christchurch. According to KI 5 (Regeneration planner/designer) the city has passed its recovery stage and is now phasing into its regeneration stage. In this regeneration phase many public spaces are in the process of reconstruction and redesign, and many new spaces have been established and are planned for the near future. Some of the key plans and strategies that have provided for direction for Christchurch after the earthquakes are the *Central City Recovery Plan* and the 2009 *Public Space, Public Life* study conducted by Gehl Architects in 2009 before the earthquakes. Many other more specific reports such as those surrounding the long term vision of Cathedral Square (which will be discussed further in the results) and the

Enliven Places Programme offer further guidance for Christchurch to achieve many of its CCPS aspirations.

The *Public Space, Public Life* study by Gehl architects in 2009 explained that problems with existing CCPS existed in Christchurch before the earthquakes. The study highlighted many pre-existing issues with the current public space, such as low pedestrian counts, lack of quality in public spaces, poor connections and accessibility between spaces, as well as low diversity of users (especially children). As a result, many suggestions were provided to address these various public space issues such as improving priority and accessibility to pedestrians and cyclists, creating strong links, providing more amenities, and creating spaces for all types of users. Since the earthquakes, further directional plans and strategies such as the *Enliven Places Programme* have been developed to encourage developers and members of the community to consider more lively and transformative regeneration options as the city continues to develop.

The map of central city Christchurch and its four evaluated public spaces (displayed in Figure 6 below) show that all four spaces are all closely located within the central city. It also shows how these public spaces (particularly Victoria Square and Cathedral Square) are notably larger compared to Wellington and Dunedin. Furthermore, while they are closely located within the central city, the map shows that there is less prominent connectivity or presence of a network between the spaces, than in Wellington.

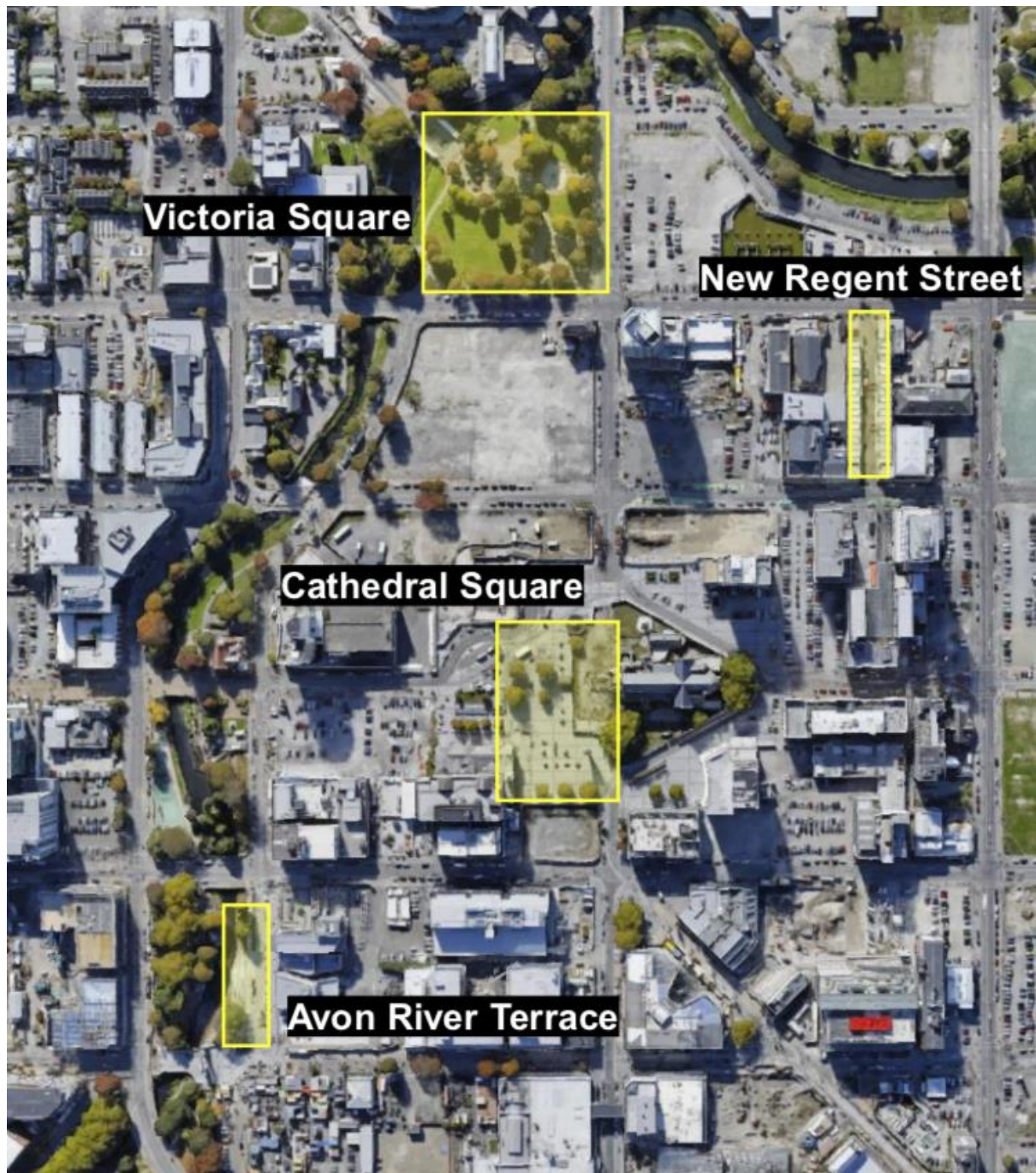






Figure 6. Map of central city Christchurch and the four evaluated public spaces.

The space descriptions for Christchurch’s four evaluated public spaces are shown below in the following table.

Table 5. Christchurch Evaluated Space Descriptions

Avon River Terrace (Waterside Space)	
<p>The Avon River Terrace space, is one of the many new developments along the Avon River, which flows near the central city. It is an area of high environmental value with access to a natural landscaped area and river with surrounding greenery. It offers many amenities and is commonly used as a recreation/reflection based public space. It is commonly used by workers during lunchtimes and by families in the weekend. The eels in the river provide a particular attraction.</p>	
Cathedral Square (City Square)	
<p>Cathedral Square, like the Octagon and Civic Square, is the main historic central city square in Christchurch. It has had a long history of uses, including as a central park and public transport hub. It is the site for the significant Anglican cathedral that was immensely damaged in the earthquakes. For the last few decades, the space has undergone many redevelopments and was also significantly impacted by the earthquakes. It currently operates as a large open space and is surrounded in construction works.</p>	
New Regent Street (Pedestrianised street)	
<p>New Regent Street was severely affected by the Christchurch earthquakes being located in the central city red zone. Despite this, the heritage buildings that surround the pedestrianised street mainly remained intact, and since redevelopment work has been carried out to reopen the space. The street offers small retail and eateries/cafes, it typically shows high pedestrian flows and sitting and dining opportunities as businesses flow out onto the street.</p>	

Victoria Square (Newly redeveloped space)	
Formally known as ‘Market Square’ a long time ago due to its role as market space, Victoria Square no longer offers the same identity or purpose it once did. Situated in the red zone, significant damage occurred throughout the area requiring recent regeneration to re-establish the space. The space now acts as a large urban park used for relaxation and recreation, with various amenities including fountains and statues, and significant greenery. The space however lacks attractiveness with little attractive drawcards and no active edges, resulting in low populations and pedestrian flows.	

4.4 Dunedin

With a population of only approximately 120,000 people (Stats NZ, 2013) Dunedin is significantly smaller than Christchurch and Wellington. The *Dunedin Central City Plan* is one of the key directional strategies guiding the development of public spaces throughout the central city. The plan recognises the need for a significant central city upgrades (particularly of public space) with the last upgrades occurring over 20 years ago. This year the Dunedin City Council announced that a \$60 million project had been proposed to target Dunedin’s ageing central city (Morris, 2018), this would accommodate much needed improvements for the public realm. The Central City Plan recognises the importance of these much required updates as it states:

The central city is a relatively dense urban city environment. There is a lack of large public open/green spaces within the central city. These few existing spaces are dated and uninspiring. Good pedestrian and physical links between spaces are also lacking.

Importantly the plan recognises two key components to CCPS. Firstly, it identifies the lack of quality and adequacy in public space describing it as “dated and uninspiring,” but just as importantly it also recognises that there is simply a lack of overall CCPS throughout Dunedin

and therefore there is serious need for further public space development throughout the central city.

Since the development of the Dunedin Central City Plan, public space developments such as the upgrade of Jetty Street into a pedestrianised street and shared space and other spaces within the Warehouse precinct have developed with guidance from the Warehouse Precinct Revitalisation Plan, part of the Central City Plan. Most recently, comprehensive plans to develop the waterfront and improve connections between the city centre (starting from The Octagon) have been discussed, with parts of the design already approved, including a \$20 million architectural bridge beginning the connection process (Loughrey, 2017). Many key informants offered mixed opinions towards this waterfront development plan which will be displayed in the results chapter. Overall, Dunedin has recognised an urgent need to update and create further central city public space, a number of projects such as part of the \$60 million CCPS upgrade and waterfront development are already in development (such as the city to harbour connection) and further developments can be seen in Figure 7 below. Therefore, understanding the nature of public space and its success will be critical now and in the city's future.

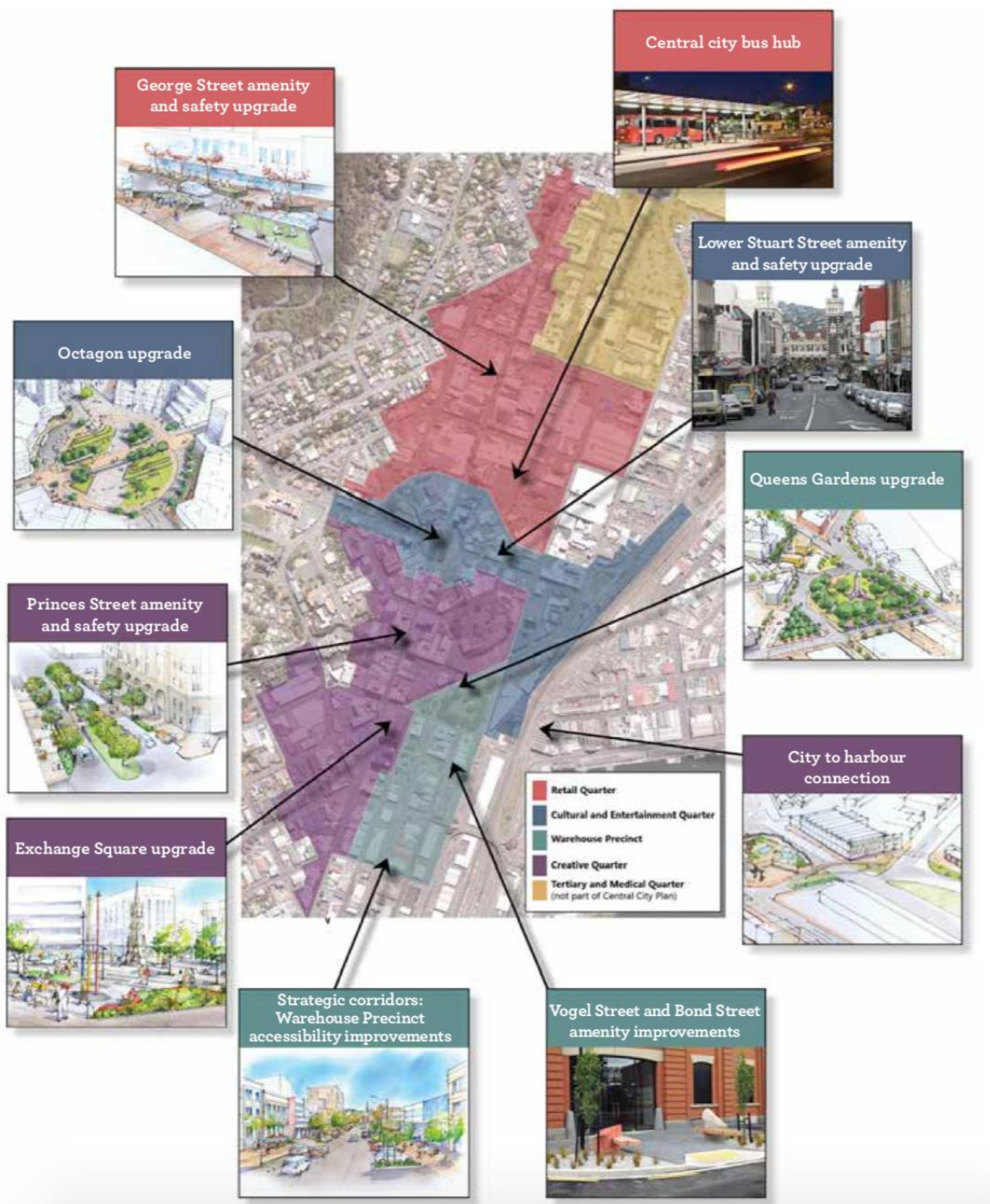


Figure 7. Proposed ‘key transformation projects’ throughout central city Dunedin (Source: Dunedin Central City Plan, n.d.)

Figure 8 below displays a map of central city Dunedin the four public spaces that were evaluated. The St. Clair Esplanade as explained earlier, is not located in the central city and is therefore not visible on the map below. The three spaces that are located on the map are notably more spread across Dunedin, compared to those in Wellington and Christchurch. Castle Street, located within the Campus zone, is arguably not central city based, especially if compared

against the above figure from the Dunedin Central City Plan. Overall, the map displays that CCPS is not as well established in Dunedin compared to Christchurch and Wellington and the connections and networks are significantly less noticeable, if not absent.

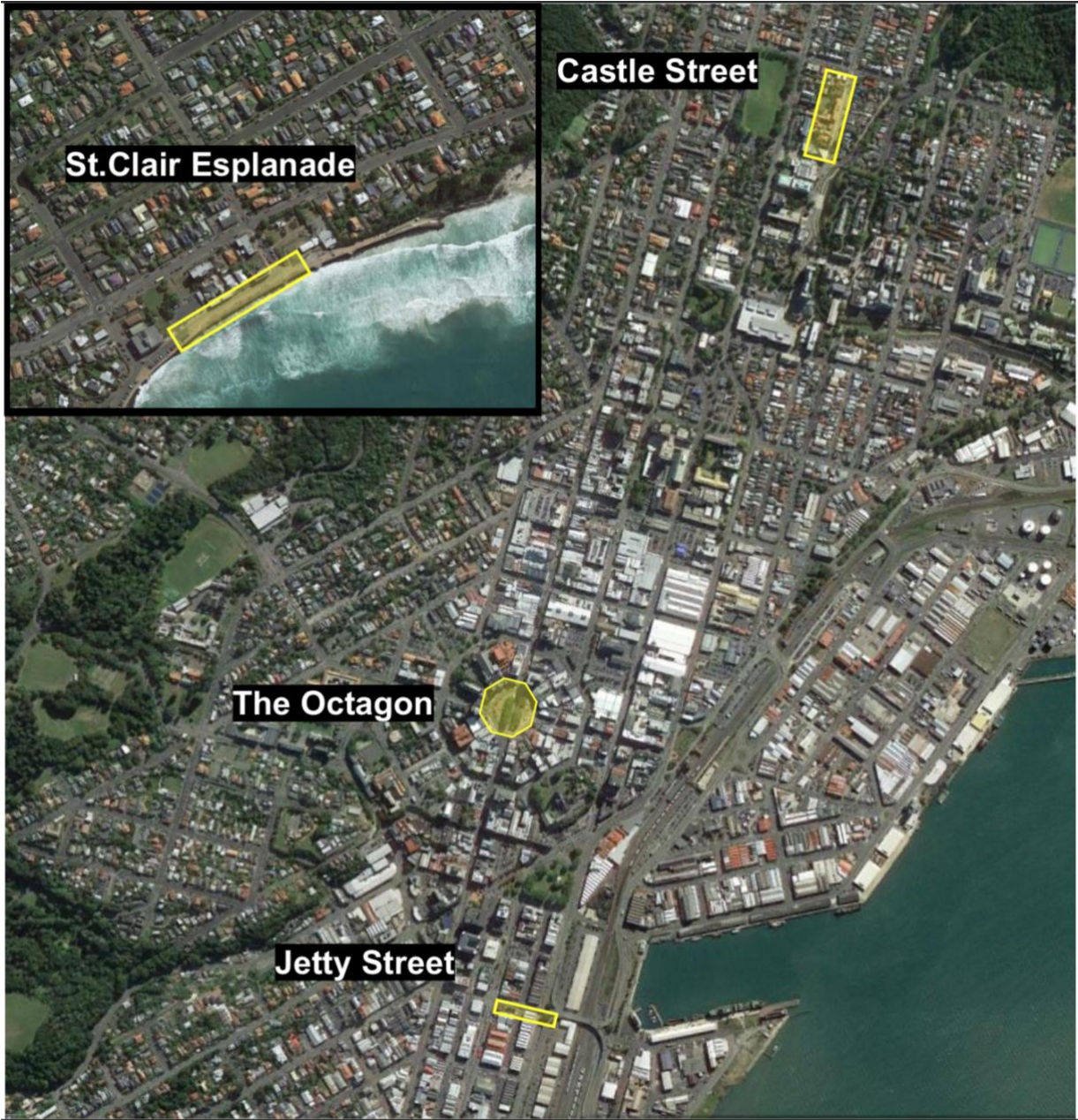





Figure 8. Map of central city Dunedin and its four evaluated public spaces (Inset: St. Clair Esplanade).

The space descriptions for Dunedin’s four evaluated public spaces are shown below in the following table.

Table 6. Dunedin Evaluated Space Descriptions

The Octagon (City Square)	
<p>The Octagon has served as Dunedin's main central city public space since early development of the city. It remains today as one of the most critical public spaces in the central and wider city as it serves its role as the city's main square. The square hosts many key events and is surrounded by many significant buildings such as historic churches, theatres, as well as many service buildings such as the local council, and restaurants/bars and retail. It offers many amenities, lots of greenery, as well as some art features.</p>	
St. Clair Esplanade (Waterside) * Not situated in central city	
<p>The St. Clair Esplanade is a well-known recreational and dining/eating space based along the St. Clair sea front. It has had a long history of upgrades that comes with the challenges of retaining a sea wall. It is one of the most frequented recreational/relaxation areas and Dunedin's only significantly developed waterfront area. It typically used for recreation, beach access, and for its various restaurants/bars.</p>	
Castle Street (Pedestrianised street)	
<p>Castle Street is a shared space situated in the university campus area. It is based along a key access route into the University of Otago Campus. Its main purpose is to provide safe access for students walking in and out of the campus and offers car parking and a combination of university services based in dwellings along the street.</p>	

Jetty Street (Newly redeveloped space)

Jetty Street is one of the most recent public space developments in Dunedin. The space was redeveloped from a road to a pedestrianised street as part of the new Warehouse Precinct Revitalisation Plan. Partly situated under a main overbridge, it offers an innovative use of space with improved access, new amenities, and public art displays (such as new seating, and interactive sheep sculptures).



4.5 Conclusion:

Wellington, Christchurch, and Dunedin, have all identified in various plans and strategies, that further development and upgrades of CCPS are required within each of their central cities, though Dunedin and Christchurch currently require more attention than Wellington for their individual reasons. There are also a number similarities and differences between each of the three cities. Wellington offers a notably higher population density than its counterparts, and displays overall greater connectivity between its more frequently used CCPS. Christchurch offers a range of both temporary and newly developed CCPS and all four of the evaluated public spaces were located close together within the central city, similarly to Wellington. The most notable differences were in Dunedin. With one space (the St. Clair Esplanade) not located in the central city, and the remaining three spaces located further apart compared to the other two cities, the city offers the most limited connectivity and networks between its CCPS.

Chapter 5 – Results

5.1 Introduction

This chapter analyses the results obtained from the public space evaluation tool (PSET) observations and from the key informant interviews. It highlights many of the notable findings over the country, as well as each of the 12 individual public spaces. The chapter and findings will be split into three main sections. The first section will cover the overall findings that were comparable across the three case study cities: Wellington, Christchurch, and Dunedin. The following section will display more detailed results offering deeper insights into individual public spaces with a more thorough reference to PSET scores and key informant comments. The final section will display results of key informant opinions about the need for a tool like the PSET for public space development. Throughout the chapter, a number of tables have been constructed to help display similarities and differences between each city and their individual spaces. The first two sections will mainly rely on results from the PSET tool in the forms of quantitative data, though will reference findings from key informants where relevant. The final section will rely on the findings from key informant interviews.

The results will be displayed in two ways. Firstly, through a series of graphs and tables based on quantitative data received from public space observations collected from the PSET. These are used to help identify notable differences and similarities between many different aspects of public space across each of the three cities. Secondly, an analysis of key informant interviews and key quotes will be integrated throughout the results and in individual sections at the end of each section. This will allow for a clearer understanding of aspects that cannot be fully understood just through the use of the PSET and resultant tables and graphs. Through analysis of both the quantitative results and key informant interviews, both sources of data will be combined into evaluation matrixes to understand the purpose, successes, and issues of each studied public space.

5.2 Overall findings from public space evaluation

This section highlights the preliminary results that were established by the PSET. It overviews many of the overall scores, as well as the individual people scores and design scores across the

three case study cities. It then looks at the performance of the ten individual component scores across the three cities, before displaying the variation in public space performance throughout different times of the day. These results are displayed in a way that allows clear comparison of scores (with tables and graphs) between each of the cities evaluated public spaces and their individual components. Quotes and information collected from key informant interviews are used to further elucidate the findings

5.2.1 People, design, and total scores

The PSET was the main observation tool created to evaluate all the CCPS. It provided an overview of how each studied CCPS performed within its city, as well in comparison with the other case study cities. Table 7 below displays the people, design, and total scores from Wellington, Christchurch, and Dunedin, as well as their average scores across each city. It is important to understand that these scores are results from four public spaces within each city, rather than every potential public space that may exist - therefore it cannot be over interpreted as a reflection of the overall cities public spaces. It does however provide a general indication of what the cities tended to do effectively or ineffectively. Firstly, the average scores showed how the overall design scores (which includes green/environmental, safety, innovation, vision/accessibility, and amenity components) tended to perform notably higher compared to people scores (which includes population, ratio of used space, stay time and walk speed, diversity, and interaction). The overall design scores achieved an average of 17.9/25, compared to a notably lower score of 10.5/25. The average total score at 28.4/50 displays that these public spaces throughout New Zealand are currently performing slightly above average, while there is still potential for improvement.

Table 7. *Table of overall People, Design, and Total scores for Wellington, Christchurch, and Dunedin.*

City	People Score (/25)	Design Score (/25)	Total Score (/50)
Wellington	10.3	18	28.3
Christchurch	11.1	19	30.1
Dunedin	10	16.8	26.8
Average	10.5	17.9	28.4

Looking specifically at the individual city scores, Table 7 displays that while the scores between each of the cities were similar, the four spaces evaluated within Christchurch

performed slightly higher than that of Wellington, with Dunedin displaying the lowest scores for each category.

5.2.2 Average public space component scores across New Zealand cities

The following results display a more detailed insight into how each of the three studied spaces individual components scored. Looking at how each of the 10 evaluated components scored can help identify what aspects of public space are working effectively and what aspects are not. Figure 9 shows how each component of public space scored throughout Dunedin, Christchurch, and Wellington. The first five components make up the people scores, while the latter five make up the design components, with all ten comprising to the overall scores. Looking at the overall trend, the five people score components were outperformed by the five design score components (shown below in Figure 9). The population averages and ratio of used space, displayed lowest average scores across all components averaging around the 2/5 mark, while the remaining people components: stay time and walk speed, diversity, and interaction on average, slightly performed better (though still relatively low). Again, the design components (shown below) performed notably better than the people components; the highest performing of the five were safety, and vision and accessibility, which were both close to achieving perfect scores. Interestingly, the innovation component displayed relatively low scores compared to its neighbouring design scores, while the remaining green/environmental and amenities components showed relatively solid scores averaging around the 3/5 mark.

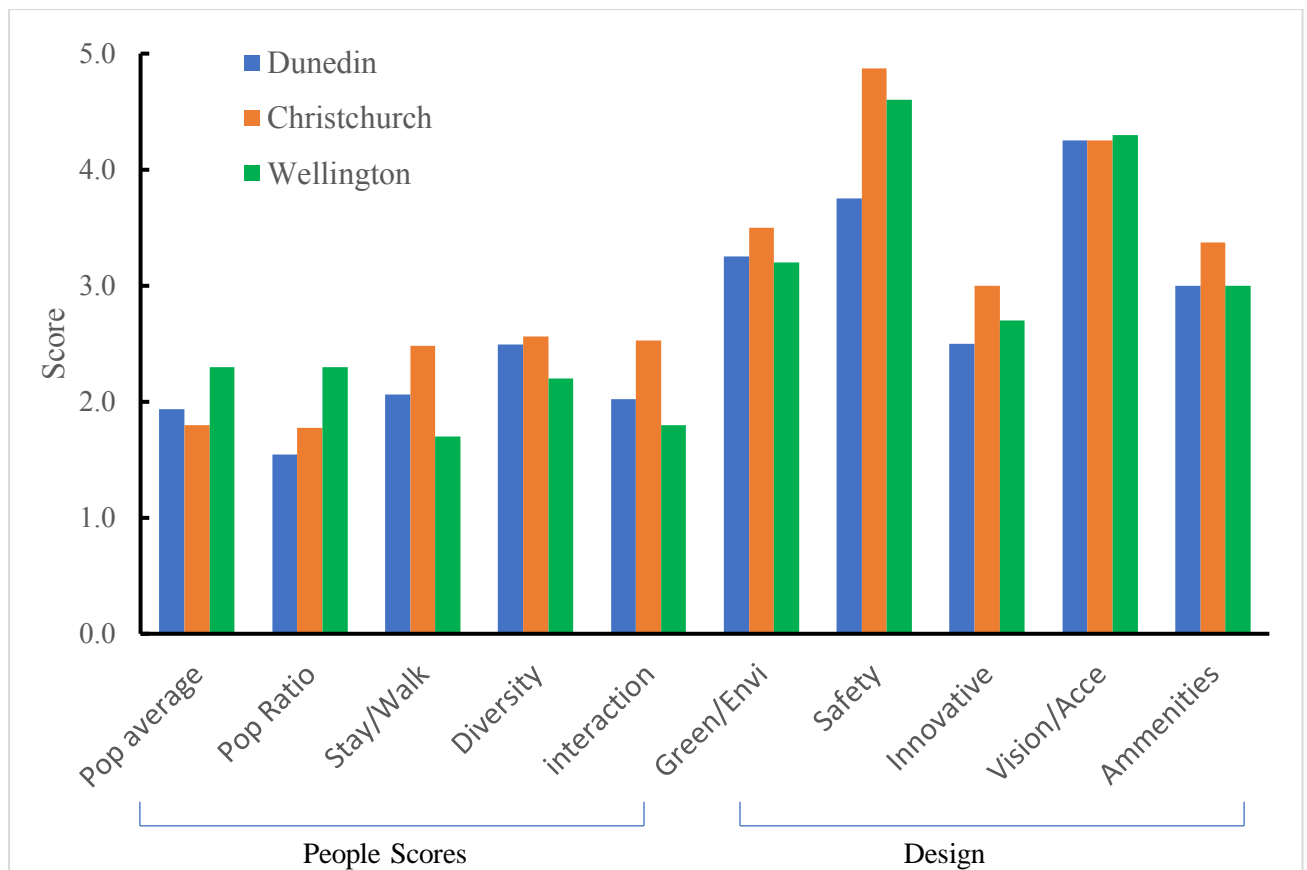


Figure 9. Graph showing individual component scores collected through the Public Space Evaluation Tool for all four spaces in each Dunedin, Christchurch, and Wellington

While many of the components were consistent across each of the three cities, some showed notable variation. The population and ratio of used space components displayed higher scores for Wellington, higher than Christchurch and Dunedin. This could be expected when the population densities in Wellington were considered greater than the other two cities. Wellington also displayed high flowing pedestrian networks through these evaluated public spaces as observed during field research and as stated by Key Informants 2 (Urban designer/architect) and 5 (Regeneration planner/designer). While Wellington slightly outperformed Christchurch with higher population and ratio of used space components, Christchurch showed some notable differences with high scores in the remaining three people components (stay time and walk speed, diversity, and interaction). This meant that while they did not have as high populations present within their public spaces, they still achieved better scores regarding the uses and users of the space. In terms of the design components, safety showed notable differences between cities with Dunedin displaying notably lower safety scores than Christchurch and Wellington, much of this was due to the involvement of traffic through some of the public spaces, most notably: The Octagon. Vision and Accessibility was also

notably high at approximately 4/5 for each city, while the remaining three design components were notably lower. The lowest of the five design scores was innovation (see methods for explanation of innovation). Within all the central city public spaces across all cities, it was observed as the lowest design score.

5.2.3 Scores across different types of public space

Across Wellington, Christchurch, and Dunedin, each of their four evaluated public spaces were selected to represent four objective categories, which included: a water based public space, city square, pedestrianised street or shared space, and a redeveloped space. Notable distinctions between each type of space were identified when data from the PSET was analysed. The following table (Table 8) displays the overall scores of each type of space for Dunedin, Christchurch, and Wellington. Public spaces situated near or around water, which include the Wellington waterfront, Christchurch Avon River terrace, and the St. Clair Esplanade exhibited notably higher overall scores than the other three categories, averaging an overall score of approximately 35/50. The second highest scoring type of public space were city squares. They scored notably lower than water based spaces, but also notably higher than the remaining two categories at 28.5/50. This left the remaining two categories: pedestrianised streets/shared space and redeveloped space, both of which scored similarly with the lowest scores of approximately 24-25/50.

Table 8. Table displaying overall scores for different types of public spaces across Dunedin, Christchurch, and Wellington

Type of public space	Average overall score (/50)
Waterside	35.1
City Square	28.8
Pedestrianisation street/shared space	26
Redeveloped Space	25.2

When key informants were asked about their respective CCPS, Wellington and Christchurch key informants both stated that the Wellington Waterfront and the Christchurch Avon River Terrace public space were, in their view, the most successful spaces within each of their cities. When discussing the importance of public spaces being situated around water, KI 2 stated:

Cities all over NZ are connecting with their water. Finally, Palmerston North is connecting to their river, Hamilton is connecting with their river, Auckland is connecting with their Harbour and it's got big plans to move it more to the port... It's been easier to make things hum in Wellington because it's got this natural amphitheatre of the harbour and people are naturally drawn to the water's edge.
(KI 2 – Urban designer)

KI 2 further stated that they believed Dunedin should and will continue to pursue the development of its harbour side, however, the current proposed plans may be too ambitious in the early planning stages. Overall, many key informants emphasised the importance of water based public spaces as they have typically been the most successful compared to other types of space, as has been observed in their respective cities.

5.2.4 Variation in public space scores during different times of day

The purpose of the following table is to display how the overall people scores across all public spaces, in each city, changed throughout different times of the day. It can help identify whether public spaces are consistently used throughout the day, or whether they are only used during specific times. Table 9 shows the weekend people scores (weekend scores were used due to the potential impact of undesirable weekday weather) that were measured during the morning, midday, and evening for each of the cities. The numbers highlighted in red show the highest score during the day; the highest scores for Christchurch and Wellington occurred during midday, while Dunedin exhibited higher scores in the afternoon (This was due to the large number of users being recorded at the St. Clair Esplanade and The Octagon in the afternoon). Wellington and Christchurch both displayed notably lower people scores in the morning compared to midday, though Christchurch was the most notable with a difference an extra 5.6 (/25) points from morning to midday. Wellington showed similarities but instead saw a notable decrease into the evening since the midday period.

Table 9. Table showing the people scores throughout different times of the weekend day for Dunedin, Christchurch and Wellington (highest values for each city highlighted)

	Dunedin	Christchurch	Wellington
Morning	10.1	10.3	12.4
Midday	9.3	15.9	16.0
Evening	12.2	14.7	10.8
Average	10.5	13.6	13.2

5.2.5 Difference in public space scores during the week and weekend

There was notable variation identified across most public spaces in Dunedin, Christchurch, and Wellington. Table 10 below displays three examples of spaces that indicate how scores differed from the weekday to weekend. These spaces were selected due to their exhibition of more notable differences between the weekday and weekend and represent different types of space from each of the different cities. Both the Avon River Terrace and Cuba Street pedestrianised street space showed a notable score increase during the weekend, with an increase to 9.2 and 6.8 out of a total 50 respectively. This was a typical representation of almost all spaces that were evaluated. The Octagon was the one identified exception. Of the 12 spaces evaluated it was the only one that displayed higher weekday scores compared to the weekend scores. This is likely because the Octagon is a public space located in centre of the CBD of Dunedin and surrounded by a high density and proximity of work places. Many workers would use the space throughout the day (particularly during lunch time) as a recreational space to sit, eat, and relax. In terms of the variation of design scores through the weekend, they did not notably change throughout each of the spaces (in most cases no change was observed), therefore almost all the change was a result of varying people scores (population, ratio of used space, stay time and walk speed, diversity, and interaction).

Table 10. Weekday scores versus weekend scores across three central city public spaces: The Octagon (Dunedin), Avon River (Christchurch), Cuba Street (Wellington)

Space	Total Score Weekday (/50)	Total Score Weekend (/50)	Score difference from Weekday to Weekend
The Octagon	30	27.5	- 2.5
Avon River	29	38.2	+ 9.2
Cuba Street	29.5	35.8	+ 6.8

5.2.6 Additional Key Informant results across all New Zealand public spaces

While many of the comments made by Key Informants were made directly about their respective city, several topics were discussed in interviews that regarded public space provision and development across three cities. The next section discussed a number of trends that are likely relevant for CCPS across all New Zealand central cities. Concepts such as the importance of pedestrian networks, edge effects, place, and the New Zealand perspective and relationship with public space, were commonly addressed considerations for CCPS by key informants. Additionally, many of the key design considerations that had been previously discussed and integrated into the PSET were also mentioned during various interviews. The key considerations and trends that were discussed by key informants and are outlined below throughout the remainder of this section.

Key design considerations

Throughout the interview process, many key informants identified what they believed to be notable design considerations when creating successful public space. Table 11 below displays many of these considerations and displays how many key informants emphasised the importance of each of them. The importance of considering the surrounding edges of a public space and offering innovative features, were the two most emphasised considerations that were mentioned by each key informant. Understanding pedestrian networks, the activation of public space, and the provision of seatings and other amenities were also regularly regarded as important aspects of public space as well as number of others that are listed in Table 11 below.

Table 11. Key design considerations mentioned by various key informants

Key design considerations of successful public space	Key Informants
Edge effects	1, 2, 3, 4, 5
Innovative features E.G. Astro-turf, interactive fountains, art	1, 2, 3, 4, 5
Pedestrian networks	1, 2, 3, 5
Activation of public space	1, 3, 4, 5
Providing seating and other amenities	1, 2, 4, 5
Shared Space (balancing vehicle traffic and pedestrian use)	1, 2, 4
Consideration of climate in design (including sun and shade)	2, 3, 4
Green environments (rather than “harsh grey” environments)	3, 4, 5
Places people want to stay and stop	1, 4

Diverse and belongs to everyone of all ages, ethnicity, etc.	2, 5
Lighting at night (safety)	3, 4
Manipulative features (e.g. moveable seating)	3, 5

Pedestrian networks:

The importance of establishing pedestrian networks when developing public space is vital according to a variety of key informants. Key Informant 1 (Design manager) believed that many of Wellington’s public spaces are successful especially due to their good pedestrian flow and connections. Vice versa, spaces that are situated off main pedestrian networks (such as Glover Park, a redeveloped space in Wellington) are notably impacted by the lack of passing potential users. KI 1 also expressed that accessibility and high visibility into the space naturally works in unison with establishing good pedestrian networks, as they should be visible and manoeuvrable in the first place.

Edge effects:

Every key informant emphasised the importance of having good edges (see explanation of edge effects in Chapter 2) around a public space. KI 2 (Urban designer/architect) believed that understanding the surroundings of a public space is one of the most critical considerations when trying to create a successful public space. They stated: “it’s very hard to make a space work if you aren’t able to understand or influence the buildings around it”. KI 4 (urban designer) added that “most public spaces don’t work, if there is no activity around especially in the building around them”, and that by adding attractive edges, it makes the space more comfortable and inviting for users. CCPS such as Victoria Square in Christchurch were used as examples that lacked attractive edges. Key informants explained that currently the space is under-used which they believe comes down to offering no attractive edges to act as drawcards for the space. KI 4 stated that it is often more difficult to make large spaces successful but regardless, Victoria Square still “needs some form of edge”. Whether it is as simple as adding cafes or restaurants (or other attractive public facilities and services as attractive features) that surround the space and spill out onto the space from the edges (similarly as seen in New Regent Street in Christchurch), or some sort of event based activity such as a market (which historically occurred in Victoria Square), further active edges are required to reinvigorate a space like Victoria Square.

The place makes the space:

Like the considerations made above about edge effects, the concept that often ‘the place makes the space’ was also outlined to be important for public space success by key informants. KI 5 (planner/urban designer) stated that “public spaces in streets only work, when the built environment works with them”. They explained that one of the key reasons Cathedral Square no longer functions as a successful public space is because all the surrounding activities such as cinemas, public transport, and restaurants, and cafes have disappeared from around the area. Therefore, without the surrounding area being considered an attractive place, the space within it struggles to succeed on its own. KI 5 used Times Square in New York City as an example. Originally, the Times Square public space was poorly designed and underperforming. People people did not understand this at the time and did not believe that pedestrianising the space would work. However, after pedestrianising the space the whole dynamic of both the place and the space became more attractive and successful.

It is therefore important to understand that the surrounding place is critical to having a successful public space. Although, KI 3 (Regeneration planner) explained that a public space doesn’t necessarily need every good aspect to make a space successful. For example, Cathedral Square is a multi-use, events based space, therefore it needs to develop with that as its core purpose. Compared to Victoria Square which focusses more on everyday enjoyment and reflection, its requirements are different to that of the place surrounding Cathedral Square, which ultimately has a different overall purpose.

New Zealand lifestyle and relationship with public space:

Some key informants also believed that creating quality public space in New Zealand is considerably more difficult than in other parts of the world. KI 5 believed that as many cities throughout the country continue to decentralise, New Zealander’s have grown close to a suburban lifestyle, where people have tended to live more privately and often the most social mixing for an average New Zealander is driving to the shopping malls. A quote from Key Informant 5 acts as a summary of their viewpoint:

In suburbia, we tended to stay in our backyards and have barbeques. We go to a shopping mall, and then we go to a factory area all by car and were not actually mixing with people very often, we stopped using public transport (KI 5 – Planner, Urban Designer, Architect).

However, KI 5 believes that as retail is changing, so will consumer behaviour. They stated: “we are still social animals, and we still need a place and reason to gather”. Therefore, designing quality public space for all types of users is critical to a healthy city, while at the same time understanding that public space is always an experiment in an ever-changing human environment (KI 3, 5). KI 5 believes that soon shopping malls will become more redundant and people will continue to search for social interaction and technology which will subsequently change the nature of social interaction. KI 5 emphasised “that’s why we are putting a heavy emphasis on education, culture, and eating and dining, which is one thing that you can’t do on the internet”.

Furthermore, KI 2 believes that there is a desire to reclaim the city back from private vehicles. They stated that it is important that cities are brave with their decision making. They believed that one way in which decision makers could be brave, is by reverting to central cities that weren’t heavily dominate by traffic. Shared spaces were explained to be an effective starting point, as well as ensuring that quality public transport and accessible parking is more common so there is less reliance on private vehicles. Furthermore, KI 4 explained how it is important to get parking and public transport right to help improve public space success. By improving car parking and public transport access, you can remove extensive pressure from busy roads, which are known to create problems for public space and repel uses from using it. Key informants 4 and 5 thought this was especially true in New Zealand, as parking and public transport is often inadequate in many cities (especially Dunedin and Christchurch). KI 5 explained there is a lot New Zealand could learn from projects in Europe. Using Copenhagen as an example, they explained how by incrementally increasing the amount pedestrianised streets, shared space, and public space, they now “have so much public space that is pedestrianised, which only works because they have incrementally increased it, people are used to it, that’s what they want. It takes a bit of time” (KI 4).

5.3 Results – Wellington, Christchurch, and Dunedin

This section of the results investigates the three evaluated cities and their individual public spaces in more detail. An evaluation matrix has been constructed for each of the three cities to allow for better analysis. Combining results from both the public space evaluation tool and key informants, the matrix provides an overview of the purpose, successes, and issues that were

determined throughout each individual public space across the three case study cities. It also displays the average component scores across each city along with the overall people, design, and total scores. A table has also been constructed that displays individual public space scores in more detail, to allow for clear analysis and comparison between spaces. Data from key informant interviews will be added throughout the section where necessary, as well as in a separate section at the end for additional key informant results.

5.3.1 Wellington

Wellington's central city public spaces displayed many individual successes and issues compared to the other two studied cities. Looking first at the overall scores, Wellington's people, design, and total scores showed small, but nonetheless, notable differences. The overall total score of 28.3/50 shows that these four public spaces together score above average, but with room for considerable improvement. Like the other two cities, the overall design scores were notably higher than that of the people scores at 18.1 and 10.3 respectively. Aside from the overall scores, some of the most notable and interesting results were observed in the differences between each of the four individual public spaces that were evaluated. Each public space exhibited its own unique successes and issues, which have been displayed in the following tables below. The Wellington Waterfront and Cuba Street were found to be more successful public spaces than that of Civic Square, and the least successful – Glover Park. By analysing the following results retrieved from the PSET and key informant interviews, the reasons for CCPS success or inadequacy can be better understood.

Uncontrollable variables:

It is important to acknowledge that weather may have had a minor impact on the overall public space evaluation scores that are displayed below. Though all data collection occurred during winter, all public space evaluations were carried out under consistent conditions (sunny, calm, moderate-mild temperature). However, exceptions occurred during the weekday evaluations made in Wellington, as they were collected under less favourable conditions with slightly lower temperatures and more cloud. Though it is determined that this will only have minor impacts on the overall scores, it is still important to identify when displaying and discussing the results. Other uncontrollable variables included construction works that occurred alongside much of Civic Square throughout the weekday, which generated notable noise and blocked some access ways into the public space.

Success and challenges:

The evaluation matrix below (Table 12) shows the purpose of each evaluated public space and many of their individual successes and issues. Wellington was the only city observed and discussed to have clear purposes and uses for all its public spaces. Furthermore, while the Waterfront, Civic Square, and Cuba Street, had their own individual purposes (such as recreation and relaxation space), they were all found to be connected to the main pedestrian network that flowed through Cuba Street and other surrounding main streets to the extended waterfront area (as can be seen when looking at the position of public spaces displayed in Figure 5 in the context chapter). The one exception to this was Glover Park, which was located one block away from Cuba street and away from the associated pedestrian network (as shown in Figure 5). When referring to the population scores of each public space Glover Park was found to have the lowest population score while Cuba Street and the Waterfront had the highest.

Successes:

Looking more closely at the successes displayed in the evaluation matrix, the Waterfront and Cuba Street were both more successful in terms of displaying higher populations and a higher diversity of uses. They offered more natural or built drawcards such as the naturally attractive water's edge at the harbour front and the interactive water art features situated on Cuba Street. In terms of the observed scores, all the spaces across Wellington displayed relatively high overall design scores (18.1/25), particularly compared to the lower overall people scores (10.3/25). The addition of the new AstroTurf (artificial grass mat) into Civic Square, according to KI 2 (Urban designer/architect) has been a success, as it has helped boost the green and environmental feel and encouraged better use of the space. Since the addition of the AstroTurf, users have commonly been observed playing sports like soccer and doing various other activities as seen in the photo in Figure 10 below. Furthermore, the addition was determined to be an incredibly effective, low-cost upgrade.

Table 12. Evaluation matrix for Wellington

Place	Purpose	Successes	Issues							
Wellington Waterfront	Waterfront/harbour side pedestrian network space	- Consistent population and use ratio across week and day. - High Green/environmental and Vision/access score ‘natural drawcard’ - Notable diversity of users (particularly on weekends)	- Amenities, and innovation could be added and improved - This could help improve mediocre interaction scores							
Civic Square	City plaza/square	- Recent improvements to amenities and greenery - New recreational capacity with new AstroTurf - Well-designed edges and good accessibility - On pedestrian network, connected to other nearby public space	- Limited population and ratio of used space - Majority of users only passing through (low stay time and walk speed scores) - <i>Extended periods of construction works during evaluations</i>							
Cuba Street	Pedestrianised commercial main street	- Large pedestrian flow (not fully reflected in evaluation results) - High Innovation score (particularly for pedestrianised street) - Good all-around score (except for stay time and walk speed)	- Low stay time and walk speed score (likely due to high pedestrian flow) - Spill out of cafes/restaurants/bars often excessive and obstructive							
Glover Park	Recently redeveloped city plaza/greenspace, situated slightly off the main pedestrian network.	- Good green/environment scores (lots of greenspace incorporated into heavy urban area)	- Occasional intimidating intoxicated groups later in evening - Off main pedestrian network - Low all around people scores							
Component scores (/5)										
	Population	Used ratio	Stay time/walk speed	Diversity	Interaction	Green/Envi	Safety	Innovative	Vision/access	Amenity
	2.5	2.4	2	2.4	2	3	4.7	2.7	4.3	3
Final Score: 28.3	Total people score: 10.3					Total Design Score: 18.1				

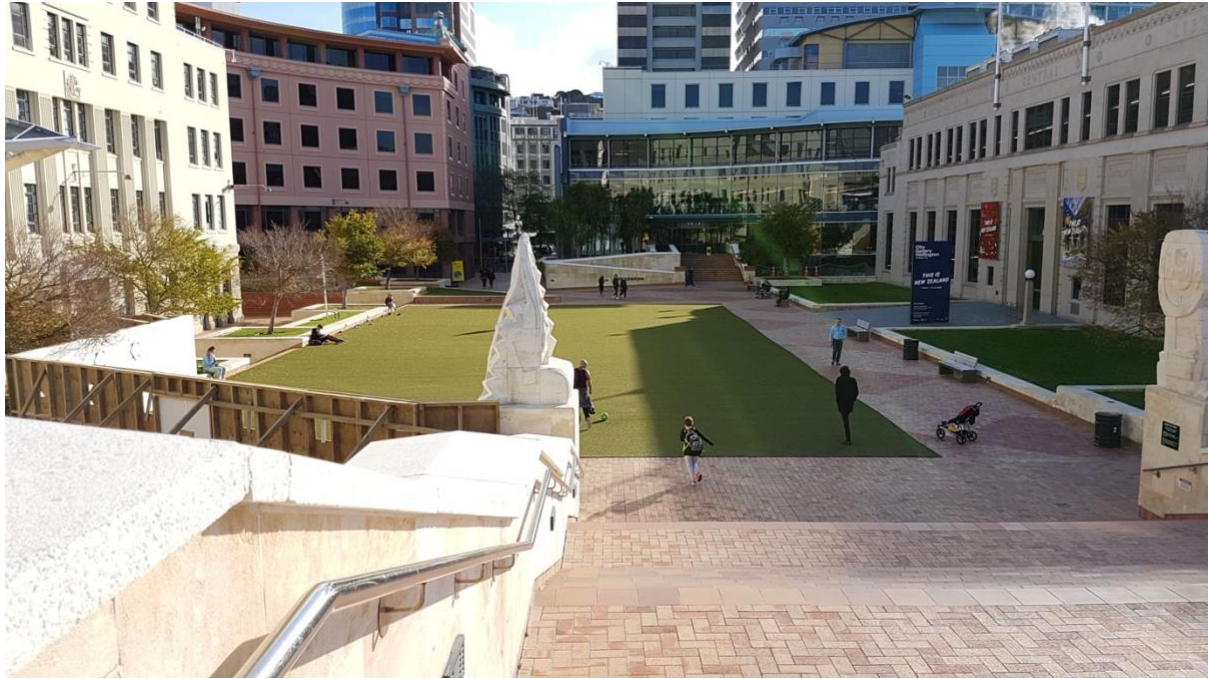


Figure 10. Adults and children playing soccer on the new AstroTurf in Civic Square, Wellington

Table 13 below allows for clear comparison between each of the public spaces and their individual components. It displays many of the more successful scores for the Waterfront and Cuba street public spaces, particularly through the people scores. The population, ratio of used space, diversity, and interaction all scored notably higher at these two spaces compared to Civic Square and Glover Park. Much of this was due to the notably higher pedestrian flows across the Waterfront and Cuba Street. Furthermore, the Waterfront exhibited a wider range of users, especially from the likes of skateboarders, cyclists, joggers, dog walkers and many others. It also attracted interaction from many users due to the piano that was placed in the space. Similarly, at Cuba Street, features such as the playground and the water bucket fountain were particularly popular and drew a wide diversity of people to interact (especially children). Similar features were not present at Civic Square and Glover Park, which ultimately showed in the average people scores between each site. Compared to the Waterfront and Cuba Street overall peoples scores of 12.2/25 and 12.7/25 respectively, Civic Square and Glover Park only scored 8.1/25 and 8.2/25.

The table also displays the more successful overall design scores, which were more consistent than the people scores across each space. Of the successful design components, safety and vision/accessibility were the most successful across all the public spaces, while innovation and

amenity scores offered opportunity for notable improvement. Cuba Street and the Waterfront were equally the two stand out spaces for Wellington, both displaying notably higher people scores (particularly through population scores).

Table 13. Breakdown of four evaluated public spaces in Wellington

Component	Waterfront	Civic Square	Cuba Street	Glover Park
Pop	2.7	2	2.8	1.7
Pop ratio	2.8	1.6	3.2	1.7
Stay/walk	1.7	1.5	1.5	2
Diversity	3	1.7	2.8	1.5
Interaction	2.6	1.4	2.4	1.3
Green/Environment	4	3	3	4
Safety	5	5	5	4
Innovative	2.7	2	4	2
Vision/Access	5	4	4	4
Amenity	2	3	4	3
People Score	12.2	8.1	12.7	8.2
Design Score	18.9	16.5	20	17
Overall Score	31	24.6	32.7	25.2

Issues:

As well as the many successes, there were overall issues and space specific issues that were observed across Wellington. As shown in Table 12, there were a number issues and challenges that were observed that were addressed by key informants. Many of these issues surrounded the low people scores that were measured across Wellington, particularly during the weekday. Average stay time and walk speed scores were identified as the lowest in Wellington out of all three cities. Table 13 displayed that no space scored higher than 2/5 across all four spaces. Civic Square was one space especially responsible for low stay time and walk speed scores. As observed, the majority of users entering the space were using it as an access route between the main streets and the waterfront area. Innovation scores were also identified to be low throughout Wellington, though Cuba Street was an exception with its variety of interactive features and public art. Overall, Cuba Street and the Waterfront were identified as more successful spaces in Wellington compared to Civic Square and Glover Park that displayed notably lower scores.

5.3.2 Wellington key informants results

When asked about successful CCPS in Wellington, key informants highlighted (in consistency with the public space evaluation tool results) that the Waterfront and Cuba street were two of the most successful public spaces within the city. Civic Square was acknowledged as a space that is not as successful as the Waterfront and Cuba Street, but is improving. Key Informant 1 (Design manager) stated that one of the major challenges for the space is that “none of the buildings provide any activity to flow out onto the square”. However, both KI 1 and 2 both explained that the space is improving, particularly through developments such as the implementation of the Astro-turf which has since seen notable increases in user population. KI 2 stated:

“It’s amazingly different when they [the Wellington City Council] put the artificial turf down, you see people stopping there now, you see people kicking a ball around, having picnics and playing with the kids. That only would have cost \$10,000 which is absolutely nothing [in terms of more typical public space improvement projects]”
(Key Informant 2 – Urban designer and architect).

KI 1 stated that further consideration has been given to implementing more interactive art and amenities such as the bucket fountain on Cuba Street into Civic Square.

Glover Park was considered the least successful space by KI 1. They believed that the biggest concern for the park was its location, as it was not situated on the main pedestrian route starting nearby on Cuba Street. Despite Wellington’s high population density, there were notably less passing pedestrians and users at this space. People who tended do use Glover Park generally did with the intent, rather than the situation with other spaces, which were well placed along high pedestrian flow areas. Key informants also explained how they aimed to improve the public realm by focusing more heavily on laneway development and activation. KI 1 stated that by giving laneways a wider purpose in the city, improving the negative connotations of laneways, and by helping further connect spaces and pedestrian networks with the waterfront, there would be extra benefits for Wellington’s public realm and associated public spaces.

Shared space:

The emphasis on shared space development was also a priority for both KI 1 and 2. Like the explanations made by key informants earlier concerning people retaking the streets back from private vehicles, this is no more true that it was in Wellington. KI 2 believed that there needs to be greater prioritisation of reconnecting people with streets. They stated that streets are the most important and most used spaces by people throughout the city: “you know the main public spaces are the streets and roads”. The desire would be to reprioritise the importance of people over vehicles by incrementally slowing vehicle speeds and by beginning to close streets off from private vehicles. Both KI 1 and 2 however stated that they understand that the conflict of politics and health and safety are often a notable barrier to effectively enabling shared space. KI 2 also believes that New Zealand as a whole is “still not quite signed up to this idea of shared space, and there is still a bit of conflict when you [attempt to develop] shared space”. Ultimately, KI 2 believed that as Wellington’s population density continues to grow it is important that an adequate amount of space exists, however, “it’s just that that space is called road, and roads are designed for cars still” (KI 2).

5.3.3 Christchurch

Christchurch, like Wellington, presented many of its own individual successes and issues. Many of which were identified throughout key informant interviews and were often not as observable through the use of the PSET. Due to its recent history, Christchurch was likely the most difficult to evaluate due to its constantly changing public realm resulting from the post-regeneration process due to the earthquakes. Many of the unique successes and issues identified in the evaluation matrix below were identified through the reliance of key informants and their experience. Issues such as lack of activation within spaces and unclear public space purpose were some of the key concerns throughout the central city. However, the city had many successes as well. Christchurch displayed many of the highest overall scores and average component scores which led to it having the highest total score of the three evaluated cities.

Uncontrollable variables

Due to Christchurch’s unique post-earthquake setting, there were many uncontrollable variables such as extensive construction and road works. As the central city continues to regenerate, the physical and social structure of the city has continued to change. As a result, many of the public spaces within it are constantly evolving at a more rapid rate than other cities (as explained by multiple key informants). All four spaces in one way or another were affected

by construction works either within the site, or surrounding it. Cathedral square was likely the most impacted by construction works, however not completely in a detrimental way. The broken cathedral and surrounding temporary decorated hoardings and information signs were an attractive feature for many, particularly tourists.

Successes:

Similarly, to Wellington, there were several overall public space successes as well as space specific successes, many of which, are displayed in Table 14 and Table 15 below. Looking firstly at the overall successes of Christchurch, the design scores were all notably high, averaging around 20/25, except for New Regent Street at a lower 15.5/25 (as shown in Table 14). New Regent Street was a small space with a more defined purpose than other spaces in Christchurch, due to its heavy eatery and retail, and heritage attraction related components. Scores such as the amenity and green/environmental components were not as high within New Regent Street because it was more difficult and inappropriate to incorporate more amenities and green features into the space (especially compared to the larger and more open, undefined spaces such as Cathedral Square). All the evaluated spaces scores were determined to be safe with perfect 5/5 scores and vision/accessibility was also notably high for all spaces as well. When looking at the overall people scores across Christchurch, stay time and walk speed, as well as diversity scored notably higher than Wellington (except for low scores identified in Victoria Square).

Table 14. Breakdown of four evaluated public spaces in Christchurch

Component	Avon River	Cathedral Square	Victoria Square	New Regent Street
Pop	2	2.2	1	2.1
Ratio of used space	2	2.1	1	2
Stay/walk	3	2.9	1	2.7
Diversity	2.9	3.1	1.6	2.4
Interaction	2.9	3.1	1.7	2.1
Green/Environment	5	3	4	2
Safety	5	5	5	5
Innovative	4	3	2	3
Vision/Access	4	5	5	3
Amenity	3	4	4	2
People Score	12.8	13.3	7.3	11.2
Design Score	20.9	20	19.7	15.5
Overall Score	33.6	33.3	27	26.7

Table 15. Evaluation matrix for Christchurch

Place	Purpose	Successes	Issues							
Avon River Terrace	Newly developed recreational space (after earthquake) along the Avon River	<ul style="list-style-type: none">- High diversity and interaction (particularly during weekend and midday)- Long stay time for users- Overall high design scores	<ul style="list-style-type: none">- Notable inconsistency in scores. e.g. low scores in morning and weekday, high scores in weekend, midday.							
Cathedral Square	Main city square, historically significant public space	<ul style="list-style-type: none">- Good accessibility/vision- High Diversity and Interaction scores- Lots of amenities (both permanent and temporary)	<ul style="list-style-type: none">- Negative reputation e.g. intimidating users at night.- Public space too large and lacks purpose- Though innovation was above average, it could be improved through better activation							
Victoria Square	Recently redeveloped large park and plaza situated slightly off the main pedestrian network	<ul style="list-style-type: none">- Good design scores (excluding innovation)	<ul style="list-style-type: none">- Low people scores (very low population scores)- Large space with little use (lack of activation)- Off main pedestrian network and lacks attractive edges							
New Regent Street	Pedestrianised commercial street, composed of retail and eateries.	<ul style="list-style-type: none">- Good population flows (not fully represented in population scores)- Good population and ratio of used space scores on weekends.	<ul style="list-style-type: none">- Low green/environment and amenity scores (likely due to limited nature of long narrow street)- Population scores low during weekday							
Component scores (/5)	Population	Used ratio	Stay time/walk speed	Diversity	Interaction	Green/env	safety	innovative	Vision/access	amenity
	1.8	1.8	2.5	2.6	2.5	3.5	4.9	3.0	4.3	3.4
Final Score: 30.1/50	Total people score: 11.1/25					Total Design Score: 19/25				

In terms of the more space specific successes, the Avon River Terrace and Victoria Square displayed high green/environmental scores because of their large amount of greenery and riverside location (particularly the Avon River terrace). Victoria Square also offered numerous water features such as fountains, which benefitted its score. Despite its criticisms by key informants, Cathedral Square displayed relatively strong overall scores with no key adverse scores. This was a result of more consistent scoring across the weekday and weekend compared to other spaces in Christchurch that displayed greater variation. Overall the Avon River Terrace was one of the stand out public spaces within central city Christchurch, with particularly high scores during the weekend. With an overall score of 38.2/50 on the weekend (as shown earlier on Table 10) the space showed the highest interaction and diversity scores of any space. The

photo in Figure 11 displayed below, highlights the interactive nature of the terrace as it offers access to the surrounding river where people can feed the eels. This offers a particularly unique and successful natural drawcard that allows the public space to thrive.



Figure 11. Families observe and feed the eels on a sunny weekend at the Avon River Terrace public space, Christchurch.

Issues:

The key concerns for Christchurch's CCPS surrounded the overall population scores. Spaces like Victoria Square were particularly accountable for Christchurch displaying the lowest of the three. Public space users within Victoria Square were often completely absent leading to a mere 1/5 population and ratio of used space scores. This pattern was reflected across all of Christchurch spaces with all population scores barely reaching above 2/5 compared to Wellington where many were closer to 3/5. In terms of design scores, New Regent Street struggled with the green/environmental and amenity scores. Furthermore, while all innovation design scores offered room for improvement, Victoria Square had the most notable issues with a lack of innovative features and drawcards for the space. Some of Christchurch's most notable public space issues were not as noticeable in the PSET results, therefore, the following section will outline the results from key informant interviews.

5.3.4 Key Informant results (Christchurch)

Key informant interviews identified a series of Christchurch specific issues surrounding central city public spaces. Key informants explained that some of the most significant concerns for spaces throughout central city Christchurch was the lack of purpose for many of their spaces, as well as the challenge of attempting to ‘activate’ low use spaces. The Avon River Terrace was widely considered across key informants as one of the most successful spaces in central city Christchurch, which was consistent with the findings from the PSET.

Activation

Key Informant 3 (Regeneration planner) summarised that currently Christchurch has an extensive amount of CCPS for its current population density. While this isn’t necessarily a problem, it does mean that much of the public space is ‘under-utilised at best’. This has created challenges for ‘activating’ spaces. As explained earlier when considering the concept of a ‘space making the place,’ KI 4 (Urban designer) offered examples of public spaces like Victoria Square lacking success due to the lack of a good surrounding environment. They explained that because much of central city Christchurch is still regenerating, many spaces (like Victoria Square) don’t have attractive places, or active edges that draws people to the integrated public spaces. As a result, currently many public spaces are under-used, and therefore lack the capability to be considered successful. KI 5 (Planner/urban designer) explained that to activate these spaces it is important to create attractive edges, as stated by KI 4: “getting the right activity around it [the public space] is really important”. Additionally, hosting regular events of any sort, whether it is having live music, or holding markets, there needs to be something that attracts people to the public space in the first place.

Purpose

Closely related to the concept of ‘activation’ is the importance of purpose within a public space. Key informants expressed that Cathedral Square and Victoria Square were two public spaces that particularly struggled with establishing a clear purpose. KI 5 explained that more comprehensive plans to overhaul the current design of the Cathedral Square public space are currently ongoing. This redevelopment will be one of many in Cathedral Squares recent history. Key Informant 4 explained that there have been many attempts to upgrade and improve the city square in the past, they stated that Cathedral Square “has not worked for a long time, because the space is too large”. KI 5 added that for a long time now Cathedral Square has continued to lose its purpose, especially when the public transport system moved out in the

1980s. Additionally, many of the important edges such as movie theatres moved away essentially leaving a large, empty space. KI 5 believes that this large, empty space presents “an opportunity to create a square that has a purpose”. They determined that by breaking up the space up into different areas with their own specific functions (such as a park area and events space) the square will develop a better sense of purpose. Additionally, the space will become a more attractive and active place where restaurants and cafes spill out to the square and areas will integrate more Māori stories and culture. It will also help activate the space throughout all times of the day and night and will welcome all types of likely users (both of which, are not currently occurring).

As stated above however, Cathedral Square is just one example of a public space in Christchurch that has struggled with purpose, for its own reasons spaces such as Victoria Square have also struggled, especially after losing its regular markets and resultantly developing into a more passive space according to KI 5. KI 4 believes that more active edges are required to allow this space and others to succeed. KI 5 used the word ‘magnet’ to attract people into the space and used examples of parks in Sydney that attracted people through an ANZAC memorial, cafes, and bars. This allowed the space to be constantly activated, attracting notable users throughout the day and at night. Overall, while many of Christchurch’s central city public spaces lack a clear purpose, plans such as those explained above, aim to reactivate and redevelop them in attempt to help clarify and attract people back into these areas.

Regeneration as a form of large scale activation

Considering ‘activation’ on a bigger scale. KI 3 talked about how there has been a lot of emphasis placed on integrating public spaces into the regeneration plans to bring people back into the city. This is essentially large scale activation where Christchurch is attempting to activate whole parts of the city rather than just individual spaces, so that it will draw in larger populations. The Christchurch Central City Recovery Plan explains how public spaces such as Cathedral Square will aim to draw people into the city square and the surrounding city as it will ‘activate and frame the city’s civic heart’. Additionally, within the new Convention Centre Precinct, Victoria Square has been targeted as a key connective space that will offer ‘day-to-day’ activities and a ‘cultural welcome’ (Christchurch Central Recovery Plan, 2012).

Reputation, crime, and homelessness

Key Informants also mentioned several social challenges that have been present in Christchurch's public space before and after the earthquake. KI 3 and 5 both agreed that crime, begging, and anti-social behaviour through many areas of central city Christchurch has led to reputation concerns and associated flow on impacts for local businesses in the area. Cathedral Square was stated as one example of a space that earned a bad reputation (particularly during the evening and night), due to the presence of intimidating and anti-social users. KI 3 explained that as soon as public spaces like in Cathedral Squares case, develop negative reputations, it can result in many potential users avoiding the space and area causing notable concern for overall public space success, but also central city activity. Additionally, similar issues (though not mentioned by key informants) were observed in Wellington's Glover Park during the evening. Antisocial behaviour by intoxicated groups deterred potential space users away due to their intimidating presence. Therefore, while it is likely a bigger issue in Christchurch, it also is a concern that should be considered in other cities too.

5.3.5 Dunedin

Dunedin had perhaps the greatest variety of success (or lack of) in its evaluated central city public spaces. The four sites were composed of one of the highest overall scoring spaces across all three cities in the St. Clair Esplanade, along with the lowest scoring space: Castle Street. As stated in the context however, the St. Clair Esplanade is not a central city located public space, but was evaluated due to Dunedin's lack of developed and used water based spaces within the central city, as well as its lack of central city public space overall. The results have determined that Dunedin was the lowest scoring city out of the three, with an overall score of 26.8/50. Importantly, there is cause for concern when the highest scoring evaluated public space (St. Clair Esplanade) is not located within the central city as this misrepresents a more realistic lower overall score. Because there was such variation between each of the public space scores, several Dunedin-wide, as well as space specific successes and issues can be displayed.

Successes:

Two public spaces presented notably higher scores than the other two in Dunedin. The Octagon and St. Clair esplanade both measured considerably higher scores, especially people scores, than Jetty Street and Castle Street. St. Clair Esplanade followed the trend of high scoring water based spaces with a notably high total score of 36.6/50, while the next highest: The Octagon scored 28.8/50. As displayed in Table 16 below, the stay time and walk speed, diversity, and

interaction components were some of the highest scoring across all three evaluated cities scoring close to 4/5. The overall design score was also notably high, scoring 20/25. Though not as high as the St. Clair Esplanade, The Octagon measured solid people scores. One of The Octagon's specific successes was that it was the only public space across all of the cities that scored a higher overall score during the weekday compared to weekend. This again was due to the nature of the location of The Octagon and its surroundings. The area contains many of the cities work places, therefore most the users were workers taking breaks or having lunch throughout the weekday, which were therefore not present in weekends. Other space specific success as highlighted in Table 17 were Jetty Street's innovative use of a once underused street and space situated underneath an overbridge, along with its interactive art and amenities and St. Clair Esplanade's high environmental score.

Table 16. Breakdown of four evaluated public spaces in Dunedin

Component	The Octagon	Jetty Street	St. Clair Esplanade	Castle Street
Pop	2.7	1	2.9	0.9
Pop ratio	1.6	1	2.6	0.8
Stay/walk	3.0	1	3.8	0.4
Diversity	2.6	2.5	3.6	1.2
Interaction	2.5	1.7	3.7	0.2
Green/Environment	3.0	2.0	5	3
Safety	3.0	4	4	4
Innovative	2	4	3	2
Vision/Access	5	2	5	5
Amenity	3	4	3	2
People Score	12.8	7.3	16.6	3.7
Design Score	16	16	20	16
Overall Score	28.8	23.3	36.6	18.7

Table 17. Public Space Evaluation Matrix for Dunedin

Place	Purpose	Successes	Issues							
The Octagon	Main central city square/plaza, historically significant, main public space surrounded by retail, recreation, and eateries.	<ul style="list-style-type: none">- Highest scores during weekday.- High stay time throughout space.- Good access into space and high visibility	<ul style="list-style-type: none">- Safety concerns with heavy traffic intersecting and surrounding space.- Low ratio of used space scores, a lot of unused area; possible association with limited innovative drawcards.							
Jetty Street	Recently developed pedestrianised street and space, situated on the edges of the city central business district.	<ul style="list-style-type: none">- Innovative use of previously low use street- Good amenity/public art coverage that is interactive	<ul style="list-style-type: none">- Very little population and resulting people scores- Poor visibility throughout space due to situation under bridge.- Unclear purpose- Limited greenery- Off main pedestrian network							
St. Clair Esplanade	Esplanade with public and shared space alongside sea wall. Surrounded by eateries, hotels, and apartments. Not situated in central city.	<ul style="list-style-type: none">- High interaction, diversity, and stay time/walk speed.- Highest population scores in Dunedin.- 5/5 Green/Environmental score due to nature of ocean- high vision/access, safety.	<ul style="list-style-type: none">- <i>Not in central city</i>- Could encourage more innovation and improve amenities quantity and quality (limited interactive amenities).							
Castle Street	Newly developed, shared space situated within University Campus zone. Connected to main University pedestrian networks.	<ul style="list-style-type: none">- Good access and visibility + connection with surrounding networks.	<ul style="list-style-type: none">- Lowest people scores, very little population, interaction.							
Component scores (/5)										
	Population	Used ratio	Stay time/walk speed	Diversity	Interaction	Green/env	safety	innovative	Vision/access	amenity
	1.9	1.5	2.1	2.5	2	3.3	3.8	2.5	4.3	3
Total Score: 26.8/50	Total people score: 10/25					Total Design Score: 16.8/25				

Issues:

Due to Dunedin being the lowest scoring city overall, many overall and space specific issues were identified throughout the central city. The evaluated public spaces in Dunedin were composed of two relatively high scoring spaces in the St. Clair Esplanade, and The Octagon – and two low scoring spaces in Jetty Street and Castle Street. These two lower scoring spaces displayed notably low people scores. However, it is important to consider that these spaces are both relatively new, and Jetty Street is located in the Warehouse Precinct, an area that is still

currently going through many redevelopment processes and therefore has less surrounding reasons to visit the space (7.3/25 and 3.7/25). As overviewed in Table 17, with specific issues such as poor visibility, lack of purpose, and situation off a main pedestrian network, Jetty Street struggled with many of its people and design components. Similarly Castle Street displayed a mostly absent population through most of the day, reflecting in the overall worst population scores across all 12 public spaces. Compared to the low people scores observed in these two spaces, the overall design scores were notably higher, with the main concerns for the design components being low innovation and amenity scores throughout the space. Low innovation and amenities scores were observed as there was generally a lack of interactive features such as public art, fountains, or other group activities that were commonly seen in other cities (such as the piano, bucket fountain, or Astro-turf in Wellington).

5.3.6 Key Informants (Dunedin)

Most of key informant findings surrounded Dunedin's waterfront or harbour side development. Drawing from experience and success from Wellington's waterfront public spaces and Christchurch's river based spaces, Key Informant 2 and 5 believed that taking advantage of the natural drawcard of the water's edge is important if Dunedin CCPS wants to be more successful. Aware of the proposed waterfront developments in Dunedin (as explained in the context), these key informants were concerned with the extensiveness and potential over-ambition of the current waterfront development proposal. One key informant went as far as stating, "Dunedin will get there, but the plan that they have got looks like it has landed from the moon, it's a bit bonkers". They believe that starting with more incremental development and improving access to and within the area would be a more suitable starting point. A concern expressed by KI 5 (Planner/urban designer) is that Dunedin should be cautious with further shopping mall developments, they stated "something Dunedin has to do, is to protect itself from the shopping mall, or it will kill the centre city, if any of that was to grow, you will kill your public realm and kill your city."

5.4 Need for public space measurement tool

Key informants expressed varied opinions when asked about the potential for developing a public space measurement tool that could determine the overall success of a public space and its individual components. Key informant interviews also revealed that a variety of public space measurement methods are often undertaken throughout New Zealand, though there did not

seem to be consistency through the range of preferred methods. Key Informant 3 (Regeneration planner) explained that public space monitoring has occurred throughout Christchurch in the forms of pedestrian counts, flows, intercept surveys and other types of monitoring. They stated that:

Still one of the most successful ways [to the measure success of public space] is to send someone with a clicker, but when you want to know five years worth of data you can't have someone standing there for five years, and that's where the gap is (Key Informant 3 – Regeneration planner).

Both KI 3 and 4 (Urban designer) agree that these monitoring methods are time consuming, as well as expensive. Therefore, an alternative method (such as the PSET) that can encapsulate these measurements in a more simple and effective form and that is accessible to any designer would be considerably more beneficial and desirable.

Another concern was highlighted by Key Informant 2 (urban designer/architect), they believed that as well as some of these current measurement methods being time consuming and expensive, they often aren't done at all. They explained that many designers that have worked on a public space do not have the opportunity to return to the space after finishing a design project and are therefore unable to understand its overall level of success.

What I think is needed, and we talk about this quite a lot, is closing the gap between our design process, between finishing something, and building it. You often open it up, but as a designer we don't do the measuring. (KI 2 – Urban designer/architect)

Both KI 2 and 3, explained how there are a number of gaps in this field, particularly when regarding being able to evaluate a public space before and after a development quickly and effectively, while covering all the aspects of public spaces that are considered contributors of its success. KI 2 proved that the potential for a tool like the PSET isn't unfeasible as architects have generally accepted the use of a similar method in the 'Post-Occupancy Evaluation (POE)'. The POE is a tool applied to measure the overall success of a building project. It is composed of evaluation methods such as a questionnaire and noise and energy consumption tests that

hope to determine whether a newly developed or redevelop building is successful or has improved.

Key informant 2 and 4 explained that the positives of a tool like the PSET is that it could be used to improve public space by identifying which aspects and components are present within the public space and which are not. Since it covers a wide range of various public space components (refer to methods chapter), it offers an overview of what needs to be considered when evaluating a public space. Importantly KI 2 and 4 believe that another benefit is that it allows for presentable evidence, which is especially important for public realm projects, so that the public as well as decision makers have access to information that can help change people's perspectives. Additionally, both key informants explained that the tool does not have to be overly complicated to be effective, KI 1 (Design manager) stated: "an evaluation matrix should be very useful, the first thing you should actually do [when evaluating public space success] is to make sure that things are in the right place". KI 2 highlighted "sometimes you have a space where you only have to make a couple of little changes for them to be more successful". Therefore, they believe that the evaluation tool just needs to provide a simple overview or check of all the present and absent aspects and components of the public space.

In terms of the contents that a public space evaluation tool should consider, there were a large variety of design considerations that should be included (as listed earlier in Table 11). Multiple key informants referred to concepts developed by the Project for Public Space and their ideas such as 'the power of 10+' (see Chapter 2 for explanation). KI 2 believed that many of these ideas are translatable into New Zealand's public space environments, they agreed that:

It's not enough to put some trees, but if you have got seats, the shade, the activity edge, then you start to get a successful thing, then you add one or two more things on the top of it to really tweak it. (KI 2 –Urban designer, architect)

While key informants 3 and 5 did not disagree with concepts such as the Power of 10+, they believe that they should be considered carefully as not all spaces have to aspire to be a public space that has every desirable aspect and component. KI 5 (Planner/urban designer) also expressed as explained above, that often the place is just as important as the space. Therefore, it is often not enough just to evaluate a public space, but rather have an appropriate understanding of its surround as well.

5.5 Conclusion

Overall, the results displayed that there were many similarities as well as many differences between CCPS throughout New Zealand. While each of the three cities offered similar overall scores, there was notable variation within the individual public spaces that were evaluated in each city. Some of the key results were observed in the differences between the four different types of space analysed, low people scores, and high design scores (excluding innovation and amenity provision). Key informants also highlighted several critical design considerations that are necessary for public space success, many of which are present throughout New Zealand, as well as many of which that are absent. Ultimately, each city and space observed its own successes and challenges and the PSET identified that there is considerable potential for improvement across each of the 12 evaluated public spaces. The next chapter will discuss these results with reference to academic literature and will attempt to use the results to answer the three proposed research questions and suggest a number of recommendations.

Chapter 6 – Discussion and Recommendations

6.1 Introduction:

This chapter will discuss the variety of findings established through the Public Space Evaluation Tool (PSET) and key informant interview results. The research aim of this thesis was to explore the adequacy and success of central city public space in New Zealand through the use of a new evaluative tool. To answer this aim more effectively, three research questions were established. This chapter is therefore separated into three main sections, each of which will answer one of the research questions that have guided the research. The first research question that will be answered, regards the overall adequacy and success of central city public space (CCPS) across the three case study cities. Information and data from the context section, the Public Space Evaluation Tool (PSET), and from key informants will be used to answer this. The second research question regards the success of individual aspects and components of public space across the three cities and mainly relies on results obtained from the PSET. The final focus question concerns the sufficiency of using the PSET as a method to measure public space and the many individual components as discussed in the results. At the end of the chapter, recommendations will be established that will offer considerations and opportunities for individual spaces, cities, or New Zealand as a whole.

6.1.1 Consideration of New Zealand context

Before discussing the findings, it is important to understand the different context that public space is being evaluated in. New Zealand has different means and ideas of managing public space compared to cities throughout Europe and the United States which much of the literature throughout this thesis refers to. Firstly, New Zealand and its cities are generally significantly smaller and lack the population densities than many other public space examples referred to in other parts of the world. Secondly, when it comes to public space management, there is often notable underfunding and less emphasis for these public realm projects compared to many of those internationally; many central city plans throughout the country admit to the lack of provision and funding that has been placed on CCPS recently. KI 5 (Planner/urban designer) added that much of New Zealand's public space is still in an experimental stage, especially in cities like Christchurch where planners and urban designers are unaware of the exact direction and purpose that public space will head in the near future. They added that "New Zealand has not got a very good history of designing large public spaces that work", particularly when

comparing them to places such as Trafalgar Square, or St Mark's Square, some of the most famous public spaces in the world. Throughout this discussion, it is important to remember the context in which these evaluated public spaces are in and how they differ from the referenced literature.

6.2 Research Question 1: How adequate and/or successful is central city public space throughout New Zealand?

This section will discuss the overall public space findings across all three cities from a broad perspective. It will attempt to answer whether CCPS throughout New Zealand is adequate and/or successful by using the three case study cities as a reflection of the national public space standards. To add further justification, the following section will discuss individual public space scores and the similarities and disparities within them, across the three cities. It will discuss a variety of results obtained throughout the PSET and key informant interviews. When answering the first research question, it is important to reconsider the lessons learnt throughout a relatively short history of planning. Mumford's (1937) criticism explained that for a long time, planning for good social functions had been treated secondary to physical city development (especially car traffic). Now as we continue to rediscover the importance of the public realm and recognise public spaces within it as 'vital organs' (Jacobs, 1961), understanding the complex nature of public space is crucial to ensuring a socially sustainable city.

6.2.1 The current status of public space provision throughout Wellington, Christchurch, and Dunedin.

Taking into consideration these theoretical perspectives of public space above, one of the first considerations that needs to be made when regarding overall adequacy of CCPS, is whether there is simply enough space in the central city. As overviewed earlier in the context, Wellington, Christchurch, and Dunedin all showed differences in their overall public space provision. During observations taken during the PSET analysis and during discussions with key informants, Wellington displayed a more comprehensive CCPS network. There was a clear network of interlinked public spaces that flowed from the main streets of Wellington city (such as Cuba Street), all the way to the extensive public space network along the waterfront (as can be seen in Figure 5 in the context). Comparing this to Dunedin, it was discovered during research as well as established in the Dunedin Central City Plan, that there was an inadequacy

of present public space throughout the central city. This became more obvious when considering spaces to evaluate with the PSET, as the only water based public space was located far from the CBD at the St. Clair Esplanade. The Castle Street space was also notably far from Dunedin, while the only space that felt like it was centrally located was The Octagon. Christchurch displayed an abundance of public spaces (some of which were linked across the Avon River) throughout the central city that were both permanent and temporary, as outlined by key informants.

After considering whether there is enough space within the central city, the next considerations that needs to be made is whether these spaces are adequate and/or successful in their overall use and design. The development of the PSET and discussions with key informants helped develop a better understanding to answer this question. Determining success is considerably more difficult and subjective however, therefore relying on best practice principles and establishing a tool like the PSET allows for a more objective approach.

6.2.2 Public Space Evaluation Tool overall scores

The total scores evaluated across all three case study cities scored above average, with scores of between 26.8-30.1/50. One of most notable findings from the PSET evaluations, was that people scores were notably lower than the design scores (10.5/25 versus 17.9/25). An argument that could be made for having notably lower peoples scores across the three case study cities, follows the early planning critiques that state that the development of ‘people places’ or the ‘human dimension’ is still secondary to that of built urban form (especially vehicle traffic). These were the concepts argued as early as 1937 by Mumford and Jacobs in 1961. It could also be considered that public spaces are valued less in today’s society; many still make the argument that public life is declining and intentions of users and the purpose of spaces become less clear (Goheen, 1998; Senett, 1992). This argument however, seems particularly extreme, though the people scores were observed notably lower than the design scores they only scored just below average.

Another reasonable argument could be observed through the contribution of several other factors that may have negatively impacted the overall people scores. One of these factors was weather and climate. Remembering that all spaces were evaluated in the middle of winter in less desirable conditions (especially with lower temperatures and less sunlight), public spaces throughout the country would have been significantly less desirable than other times of the

year. Cooper Marcus and Francis (1997) and Gehl and Svarre (2013) explain that weather is a critical determinant of whether public space will be used. Less desirable weather in winter does not just naturally deter uses due to colder temperatures, but post-implications of bad weather such as having wet seats, or grass can additionally deter uses from using public space. This is relevant to evaluations undertaken in Wellington during the weekday, because of a week of consistent rain. Even when evaluations were undertaken during periods of fine weather, amenities, grass, and other components may have been wet (wet grass areas in Glover Park and several wet seats across all Wellington public spaces were noticed during observations). Gehl's (2013) study of Copenhagen determined that pedestrian traffic would move 35% faster during cold days in winter, compared to a warmer day in Summer. Therefore, it would be expected that overall stay time and walk speed scores would be lower, contributing to a low overall people score. A final consideration prompted by Gehl and Svarre's (2013) study was the consideration of how construction works or similar noisy events can deter uses from public spaces. Construction works were present throughout many evaluated public spaces, particularly throughout Christchurch which could have implications for overall people scores.

A separate factor that should be considered as a potential cause for below average people scores, was that PSET evaluations conducted on the weekday were given just as much weight as evaluations conducted on the weekend. Naturally, public spaces are notably less popular during most times of the weekday (obviously as a majority of people are at work or school) therefore all public spaces scored notably higher people scores during the weekend. If evaluations were only conducted during the weekend, one would expect significantly higher overall people scores. One exception to this however was The Octagon in Dunedin, which was the only public space to display a higher people score on the weekday to weekend, which was explained to be because of the influence of workers using the space throughout the week.

6.2.3 Broad public space successes and issues

Without going into detail of individual spaces and their individual component scores (which will be discussed in the next section), there were a number of notable successes and issues that were commonly discussed with key informants and found throughout observations during research. Many of these were some unforeseen, important considerations that were determined to have relatively notable implications for public space success.

One of the first key considerations across the three case study cities surrounded ideas of pedestrianisation and pedestrian networks. As discussed earlier, Wellington had clearly well-established pedestrian networks. Especially compared to Dunedin, which failed to link and network its few central city public spaces together (as displayed in the context). Heng and Chan (2000) expressed how important it is for many public spaces to be able to ‘tap’ into their surrounding pedestrian network. Therefore, as Dunedin lacked these networks across its public space, it could be one reason for the city exhibiting the lowest average overall population scores.

The concept of walkability is also important according to Forsyth and Southworth (2008), there are benefits when people are safely and easily able to walk through a city. It additionally, helps reduce vehicle congestion, offers environmental benefits, as well as mental and physical health benefits (Forsyth and Southworth, 2008; Southworth, 2005). Gehl (2010) also explains that establishing pedestrian networks are a key part of creating cities for people and has emphasised it in the two studies conducted in Christchurch and Wellington. Key issues for Dunedin’s CCPS concerned its lack of connectivity and networks across their public spaces, but also the direct pedestrian concerns on individual public spaces. The Octagon was an example of a space that potentially limits its success from congested traffic. Not only is the space surrounded by a busy road, but the main street passes through the public space. Carmona (2010), Gehl (2010), and Cooper Marcus and Francis (1997) have emphasised the concepts of ‘people places,’ spaces that should be pedestrian friendly above all else and encourage people to use spaces and streets that are not busy with traffic. Currently this directly limits the space and impacts The Octagon’s safety score, which was notably lower than most of the other evaluated spaces. It is also likely that it has implications for all the people scores across the space. Christchurch spaces offered better connectivity across the central city than Dunedin, however notable improvement is still required between its space which was also noted in Gehl Architects *Public Space, Public Life* study in 2009.

This naturally leads into shared spaces, a concept that Wellington is continually trying to emphasise in its public realm future development. Shared space is something that all cities could integrate as it allows vehicles to remain in the city but reprioritises pedestrians as the dominant users (Kaparias *et al.*, (2012). Allowing for the development of more shared spaces not only provides benefits to improve pedestrianisation as discussed above, but also frees up extra public space that Wellington will require in the near future to ensure its social

sustainability - especially as population continues to grow and densify (Key Informant 2 – Urban Designer/Architect).

Another issue that was found in the results was the lack of purpose of some public spaces, particularly throughout Christchurch. Many authors believe that public life has continued to decline over the recent decades. Cooper Marcus and Francis (1997) explained how many central city public spaces have become scattered and unconnected as much of their original use and purpose has diminished. There are many reasons for this, such as the role of technology impacting the degree to which public space is required for contact and interaction (Banerjee, 2007; Carmona, 2010a), or as space more commonly becomes privatised (Carr *et al.*, 1992). Understanding the arguments that increased vehicle traffic, privatisation, and other factors such as the rise of technology and internet have led to a decline in public space across the world, provokes the consideration that there is a chance that people no longer value public space throughout central city Christchurch and other parts of the country. Some believe that New Zealand cities struggle to develop quality public space because people are more likely to spend time in their private homes and yards than in the public realm (KI 5 – Planner, urban designer). This is just one perspective however, there are more likely more convincing reasons for Christchurch's undefined purpose throughout its spaces.

Perhaps a stronger and more relevant argument in New Zealand's context is made by Gehl and Svarre (2013) who explain that more so public life has evolved from activities that are optional rather than a necessity (e.g. a core marketplace that a community relies upon, compared to a place to sit, eat, and relax at lunchtime). Therefore, designing public space requires more thought in today's society. These are ideas that have been considered in Christchurch as it attempts to redefine many of its public spaces that lack a clear purpose. Often in these scenarios, it is not just the design of the space that needs to be considered, but also the surrounding place. If there is no desire to visit a place, it is less likely that any public spaces within it will be desirable. It is important that these spaces adopt a purpose, whether that is done through design, or whether it is shaped by members of the public who use it (as explained by Cooper Marcus and Francis, 1997). As stated in the results, KI 5 (Planner/urban designer) explained that humans are still social beings and therefore require spaces that allow them to interact with one another. Cooper Marcus and Francis (1997) agree with this explanation, they discuss the importance of people's continual hunger for pedestrian life, outside of vehicles, in

urban centres. Therefore, if Christchurch is able to design the spaces in a more thoughtful way, people will undoubtedly visit and use the space. This will be discussed later in further detail.

6.2.4 Public Space type differences

By establishing four categories of public space, clear differences between the overall success of each space could be identified. The results explained how the four spaces performed very differently, there are several considerations that can therefore be discussed which will help understand how we can shape public spaces to become more successful.

Water based spaces:

One of the most notable outcomes from the PSET results, was the clear distinctions between the four types of public space categories that were determined throughout the research. Four spaces were selected in each of the three cities through the following categories: water based space, city square, pedestrianised street/shared space, and redeveloped space. As shown in Table 8 in the results section, water based spaces clearly displayed the highest scores. Following this was city squares, which was notably higher than both pedestrian streets/shared space and redeveloped space. This shows that developing public spaces around the natural drawcard of a waterfront, or riverside, is a desirable method. Carr *et al.*, (1992) stated that developed and revitalising waterfront areas has become part of the ‘public space renaissance’ where redeveloping and constructing new types of space like on waterfronts, or greenways is becoming more important in today’s society as we have to think more innovatively about our public space.

Dunedin displayed how successful water based public space can be, with the St. Clair Esplanade scoring as one of the highest public spaces across all three case study cities. Notably, both water based spaces in Christchurch and Wellington were high scoring and successful in their own rights. The challenge is now integrating these water based developments closer to the central city. While Dunedin does have existing plans for the waterfront area, the current plan is potentially over ambitious (as explained by Key Informant 2 – Urban designer and architect). While development of the waterfront area is undoubtedly required to upgrade the city’s public realm, as proved throughout literature and key informant feedback, it could be recommended that plans should start at a more incremental and manageable way. Following the success of Wellington’s waterfront spaces, and Christchurch’s Avon River terrace space, these were not overly complicated designs, but they ensured that there was strong connectivity

to the space and to the attractive natural drawcard of the water's edge above all else (which was considered important by Carmona, 2010). Therefore, considering preliminary establishment of strong networks from the central city to the waterfront before considering significantly large scale projects, would be another method that could be considered for Dunedin's waterfront development.

City Squares:

City squares are often considered the most important places of the city (Freeman and Tranter, 2013; Project for Public Space, 2018). Jacobs (1961:1) writes that these "main public places of a city, are its most vital organs". While the city square spaces across all three cities did not score as the lowest category of space through the PSET, each city square throughout the three case study cities showed significant room for improvement. Civic Square in Wellington had been undergoing a number of minor upgrades and surrounding major upgrades, Cathedral Square in Christchurch has had extensive amounts of funding spent on past and future upgrades, and the Octagon in Dunedin has its own considerable challenges and upgrade targets in the Dunedin Central City Plan.

As the Octagon has already been discussed, Cathedral Square is another public space that has drawn significant planning and urban design attention over its long history. As mentioned previously, the square has had numerous redevelopments over the last 100 years and so has the area around it. It has struggled to adapt to its surroundings according to KI 5 (Planner/urban designer) and has therefore failed to develop a defined purpose or find any forms of activation as a city square. Current plans to overhaul the design of the space are in development and are aiming to redistribute the large open space into many more defined segments with more activities. The Project for Public Space (n.d.) offers various ideas of how to create successful city squares, many of these surround their concept of the Power of 10+. This concept emphasises the requirement for spaces to have a layering of at least ten reasons to visit a space. This is something that is being considered in current plans, and should be emphasised in other city squares such as Civic Square and The Octagon. The addition of the Astro-Turf in Civic Square was a simple innovative approach that added a comprehensive layer of attraction in the space, it attracted other users (for example families playing soccer) to the space. Additionally, these sorts of developments allow for concepts such as Whyte's (1956) idea of 'triangulation' to occur, as people find an indirect means of interacting. The Octagon showed signs of adding potential attractive drawcards, one noticeable feature was the chessboard. However, this

featured was flawed, as the chess pieces were not present which meant that this potential extra layering activity was non-existent (though it is often used in summer). There were many other examples of amenities, unique designs, and other activities throughout the 12 evaluated public spaces (such as the bucket fountain and piano in Wellington, or the ability to walk down to the water level and feed the eels at the Avon River Terrace in Christchurch), although there was considerable potential for further improvement and addition of more of these features to improve this layering.

Pedestrianised streets/shared space and redeveloped spaces:

Both the pedestrianised street/shared space and redeveloped space categories performed the lowest of all spaces throughout PSET evaluations. The importance of integrating more shared spaces and improving pedestrianisation in cities has already been discussed (Gehl, 2010; Kaparias *et al.*, 2012; Hamilton-Baillie, 2008). However, little has been mentioned about redeveloped spaces. Glover Park, Victoria Square, and Jetty Street (the three evaluated redeveloped spaces) all displayed notably lower scores than the majority of spaces. Many of the reasons have already been discussed, as these spaces were generally situated off main pedestrian networks and had unclear purposes. More detail on some of these redeveloped spaces will be discussed in the following section.

6.2.5 Research Question 1 summary:

Though the following section will discuss individual component scores in more detail and offer further justification for final evaluations, the aim of this section was to answer the first research question: How adequate and/or successful is CCPS in New Zealand? Therefore, the following table (Table 18) displays a checklist of whether each of the three case study cities offer adequate, and/or successful public space. Because the term ‘successful’ is subjective, the final decision will be based four criteria created through data received from the PSET, the context of each city and space, and the many discussions with key informants. In Table 18 below is a final evaluation table made up of four categories. The categories consider whether the city:

1. Exhibits a sufficient quantity of established public space? (established means the space no longer requires significant development).
2. Has clear links and pedestrian networks between its CCPS.
3. Has no underlying problems or flaws with its public space (e.g. significant social issues, unclear purposes, or no activation).

4. Exhibits an above average PSET score.

To be considered adequate in the final evaluation, a city must show that it has a sufficient quantity of well established public space (shown as the first category). It must then meet at least one of the remaining categories so that it achieves a total of two out of four of the required aspects. To be considered successful the city must meet all four categories.

Wellington displayed an overall score of 28.3/50. The city offered numerous variations of CCPS across the city and waterfront area, many of which were located on a well-designed, clear pedestrian network. Despite overall scores only generally performing just above average (though taking the role of the winter season into consideration), Wellington spaces generally offered clearly defined spaces that achieved their purposes. Overall it met all four categories and was therefore considered both **adequate** and **successful**.

Christchurch offered an abundance of public space within the central city with respectable overall scores allowing it to meet the criteria as **adequate**. However due to its recent history, the city still exhibits many underlying public space issues, such as lack of purpose, limited activation, and some social concerns (excluding the success of the Avon River Terrace). It is expected that this could be remedied after the regeneration process and many public space projects are completed. The city however, in its current state has been considered **unsuccessful**.

Though Dunedin offered two public spaces that were more than adequate and successful in their own rights in The Octagon and the St. Clair Esplanade, it also exhibited two of the least successful spaces, in Jetty Street and Castle Street. The Octagon and the St. Clair Esplanade are perhaps the two most well-known and small handful of successful public spaces in Dunedin, they are both well established, have clear purposes, and exhibited respectable PSET scores. The Esplanade in particular displayed some of the highest scores (as was typical with water based spaces) and The Octagon was unique in the fact that it was the only space to display higher weekday scores than weekend scores. However, Dunedin has an overall lack of public space throughout its central city. It was considerably more difficult to find relevant public spaces to evaluate, and the evaluated four spaces showed no signs of connectivity to other spaces. It additionally displayed the lowest overall scores, people scores, and design scores (though only just). As it failed to meet the first category on the table below and only an overall total of one out of four, it is therefore considered **inadequate** and **unsuccessful**.

Table 18. *Final evaluation table of overall adequacy and success of Wellington, Christchurch, and Dunedin*

City	Criteria				Final evaluation	
	Sufficient quantity of established public space	Clear links/networks	No underlying problems	Above average score	Adequate	Successful
Wellington	✓	✓	✓	✓	✓	✓
Christchurch	✓	–	✗	✓	✓	✗
Dunedin	✗	✗	✗	✓	✗	✗

6.3 Research Question 2: What aspects of central city public space are successful or unsuccessful in New Zealand?

6.3.1 Discussion of notable individual components

To answer this research question, a brief discussion of the most notable and unexpected PSET components across all twelve public spaces is required. Much of the theory has already been outlined above in the previous section, but it is important to consider the many design guidelines to creating successful public space such as those produced by Cooper Marcus and Francis (1997), Gehl (2010), Project for Public Space (n.d.), and Montgomery (2007). Most of these guidelines and the theory within, explain the importance of consistency between all components. Just like the Power of 10+, it is important that all layers (and in this case all components) are present and successful within a space, because even if one component or one layer is not present, it can upset the overall composition and dynamic of the space (Project for Public Space, 2018). This logic can be applied when considering why all the people scores were so similar, with the most variation occurring between cities. It could be argued that these people scores are all interlinked – take for example diversity and interaction. It is likely that if you have more diversity (e.g. more children, or more skateboarders) you would likely receive higher interaction scores, as there is a wider range of users who may be interested in separate aspects of a public space.

One concern from these PSET results was the population and ratio of used space components. Gehl and Svarre (2013) explained how the number of users and the overall use of the space is the most simple and reflective evaluation of an overall public spaces success. Furthermore, in

Gehl Architects review of Christchurch, notable emphasis was placed on the idea that “putting people first, should be a core principle of any planning process” and that this is an area that New Zealand cities, particularly Christchurch needs to address (A City for People Action Plan, Christchurch, 2010). There is therefore cause for concern when these two components were observed as lowest overall scores. Cooper Marcus and Francis (1997) in their design principles explained how a well-designed ‘people place’ should ensure that there is a balance of good physical design, as well as promotion of social wellbeing and recreation. These results displayed in Figure 12 below show that there is an imbalance of notably higher design scores compared to people scores. It is however likely, that due to evaluations being undertaken in winter, people scores are not as reflective of the across the year, as explained earlier.

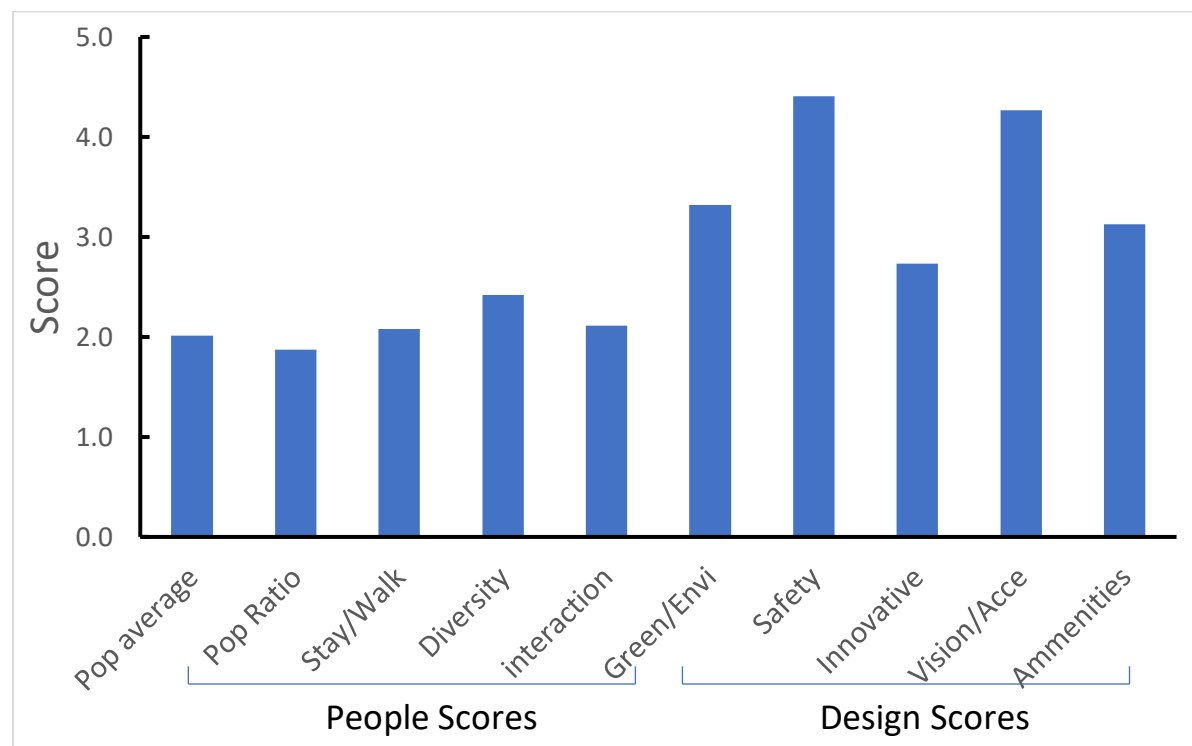


Figure 12. Graph showing individual component scores collected through the Public Space Evaluation Tool for Dunedin, Christchurch, and Wellington.

Figure 12 above displays the average scores for the ten components comprised in the PSET for each of the twelve evaluated public spaces. It clearly displays the trend of lower people scores compared to design scores as discussed above, as well as many differences and similarities between each of the components. This graph can help display the benefits of the PSET as it offers not just insights into each component, but how they differed between spaces. An example of this was the safety component. As explained in the results, though despite safety displaying

the highest overall score, Dunedin safety scores were notably lower than that of Christchurch and Wellington, much of which was due to the Octagon. Safety was considered as priority concern for some across public space (Mehta, 2014). The Octagon's safety score was significantly hindered due to heavy traffic that surrounded and separated the space. This is a concern, as vehicle traffic can be one of the most critical deterrents for using public space and has been one of the key reasons that shared spaces have become a desirable type of development (Gehl, 2013; Hamilton-Baillie, 2008). Therefore, it is recommended that methods such as traffic calming, creating shared space, or even complete pedestrianisation should be considered in this area. Research displayed that by minimizing vehicle dominance, spaces can dramatically decrease accident rates. For example, after traffic calming was undertaken in the Netherlands, accident rates decreased by 80% (Schlabach, 1997). Similarly, understating vehicle dominance was explained to create notably more attractive spaces for people (Carmona, 2010; Gehl, 2013).

Another component that was especially notable, was innovation. Out of all the design scores innovation was clearly the lowest. Innovation in a public space can be achieved through a variety of means. One of the most common suggestions for innovation throughout key informant interviews and research was the need for creativeness of adding desirable features and drawcards into a space to make it more attractive. This could be achieved by adding manipulative amenities such as public art, fountains, or other interactive amenities (Cooper Marcus and Francis, 1997; Freeman and Tranter, 2013). This was an effective method of attracting users to interact in spaces such as seen in Cuba Street with the bucket water fountain and playground, the piano at the Wellington waterfront, Astro-Turf as discussed in Civic Square, and Cathedral Square with its movable seating. These sorts of desirable, innovative features were absent in many spaces; therefore, further provisioning of features such as those listed above could prove useful when attempting to improve public space performance. With links to amenities (the second lowest performing design score), these two could both be improved simultaneously within central city public space to make more attractive environments. Places like The Octagon, Victoria Square, and Glover Park could easily implement more innovative approaches to help boost their attractiveness and associated use.

6.3.2 Research Question 2 summary:

The final evaluation for answering this research question is essentially provided for by the graph earlier in Figure 12. It clearly displays how each component of public space performed

on a spectrum across New Zealand. All five people design components (population, ratio of used space, stay time and walk speed, diversity, and interaction) all consistently scored just below average. While the design components all scored notably higher, innovation and amenity components showed significant room for improvement. Safety and vision and accessibility both identified as standout components that typically received close to maximum scores.

6.4 Research Question 3: Can a simple, applicable evaluation tool allow for effective measurement of the many different aspects and overall success of public space?

One of the key outcomes of this research was to determine whether a public space measurement tool can be developed in a way that can effectively evaluate the successfulness of the many aspects and components of public space. It is important that this method should be simple and accessible so that anyone wanting to better understand the dynamics of public space should be able to do so. Key informants offered a variety of mixed feedback about the use of the PSET or a similar tool in public space urban design practice. As much of it was already overviewed in the results, this section will briefly highlight the key points and discuss them in more detail. It will consider the needs for an evaluation tool, the strengths of the PSET, and future considerations for the PSET.

6.4.1 The need for a public space measurement tool

A clear theme in the literature suggested that there was a significant gap in methods available to measure the success of public space across the world (Mehta, 2013). And while many guidelines that identify the key aspects and components of good public space design exist, they rarely offer a means to measure these components in a satisfactory way (Cooper Marcus and Francis, 1997; Montgomery 2007; Project for Public Space 2018). This notion was reflected in the various discussions with key informants when regarding New Zealand CCPS. Almost all key informants agreed that methods of determining the success of public space throughout New Zealand are inadequate, and these methods are not consistently applied throughout different cities. Furthermore, methods such as pedestrian counts that were used in Christchurch were effective, but they only encapsulated very small aspects of public space and were incredibly time and resource heavy. As shown in studies by Gehl (2010) and Gehl and Svarre (2013), while methods such as pedestrian counts as and measuring walking speed and stay can be

effective, they often require intensive resources and are therefore not applicable in many scenarios, particularly throughout New Zealand cities.

6.4.2 Strengths of the PSET

Because the more comprehensive methods such as those used by Gehl and Svarre (2013) cannot be reasonably employed throughout New Zealand, a tool like the PSET (which was created as part of this research) could be an effective solution. Two key strengths of using the PSET were determined throughout the evaluation process and from key informant discussions. One of these strengths that the PSET could offer is the ability to fill the gap in the development process of a public space project. The tool offered the capability to carry out evaluations across the before, during, and after stages of a development, a process that key informants described as something that is rarely done. Secondly it provides an opportunity to simply overview a space to determine whether a public space is performing well, as well as being able to identify any aspects or components of the space that aren't functioning effectively and therefore making it easier to create clear targets moving into a development or redevelopment process. Though this is similar to overviewing a space with guidelines such as those developed by Cooper Marcus and Francis (1997), it would offer additional quantitative results due to the integrated methods. This would allow for results to be displayed more effectively and therefore allow for more easy and transparent decision making.

6.4.3 Future considerations

Through the various feedback received from key informants, one consideration that stood out was that not every public space should have to aspire to offer every aspect that typically makes a good space. Gehl and Svarre (2013:11) write that “every city is unique, and observers must use their eyes, other senses and good common sense”. It is important to consider that there are limitations of the PSET, especially when a space that may be considered for evaluation may not require ‘amenities’ for example. New Regent Street was a space that this could be applied to. Though this space offered limited public seating, the purpose of the space was more so targeted for shoppers and for people passing through, rather for people looking for a spot for relaxation and recreation. Therefore, it is important to understand that there are limitations of a broad scoped tool such as the PSET.

More difficult components to measure are also something that should be considered in the future development of a tool like the PSET. Weather and local climate is something that was

perhaps undervalued throughout the research process. Cooper Marcus and Francis (1997) and Gehl (2010) explain that climate should be considered throughout the design process and that it is not just something that is uncontrollable. The Wellington Urban Growth Plan discussed how battling harsh local climates (such as wind on the waterfront) was a concern for public space development. Therefore, the importance of climate should be considered as an additional measurement for the PSET.

6.4.4 Research Question 3 summary:

With the above in mind, the PSET was considered as a crucial tool in determining the success of CCPS across New Zealand. If the strengths of the PSET weren't as well utilised throughout the research process (such as the ability to determine the overall success, or to measure individual public space components), it would be unlikely that focussed answers and conclusions to the research questions would have been as achievable. Therefore, the PSET can be considered as an effective tool to evaluate public space and was found to be particularly useful for offering a preliminary understanding of whether individual components of public space are successful, or whether they require further attention. However, it is also important to consider that there are limitations to the tool, some spaces are not as easily evaluated as others, and there will always be other important considerations (such as climate) that may be undermined if flexibility is not integrated throughout application of the tool.

6.5 Recommendations

After discussing the findings above, there are many recommendations that can be established to help develop a better understanding of successful public space development. With many developing and ongoing plans to upgrade central city public space throughout New Zealand, additional information in the form of recommendations can help carry out these processes more effectively. These recommendations are mainly developed for planners and urban designers (or others who work on public space design and development), and they hope to offer further advice throughout the decision making and development process.

New Zealand wide recommendations

- 1. Establish more shared space and pedestrianisation developments across central city New Zealand, especially when there are pressures of limited amounts of public spaces.**

The space should determine the most appropriate type of development, some spaces might be more applicable for shared space development, while some might justify undergoing complete pedestrianisation.

- 2. Ensure that there are clear pedestrian networks that link central city public spaces together and ensure that they are safe, accessible, and visible.**

Wellington exhibited strong pedestrian networks and links between its public spaces that stretched from the central city to the waterfront. Cities such as Dunedin could learn from this as the city will likely be attempting to develop areas between The Octagon and the harbour side with guidance from the discussed proposed plans.

- 3. Allow for more creative thinking in public space projects, especially when spaces have an unclear purpose. Consider adding drawcards and more edge effects to help activate underused space.**

Key informants talked about the importance of ‘place’ when creating good spaces, it is important that the surrounding area of a space is attractive and offers a reason to visit the space (e.g. the many bars/cafes and shops on New Regent Street, and Cuba Street). Currently places like Victoria Square and Cathedral Square lack surrounding edges making the place dull and uninviting.

- 4. Focus on developing more innovative environments, this could be achieved through more creative amenities such as interactive fountains, public art, and group activities.**

Similar to the previous recommendation, The Octagon, Victoria Square, and Glover Park could especially benefit from additional attractive drawcards that invite people to a space. Examples of group activities are occasions that facilitate individuals or groups coming together. This could be playing in interactive fountains, playing chess, or listening/dancing to street performers or other live music. The more ways that exist to add layers and attract people into a space and to interact, the richer the environment (Project for Public Spaces, 2018).

- 5. Pay close attention to the individual people components in a public space as they may directly influence another. For example, ensure that there are a diverse range of users, this may help achieve better interaction throughout the space.**

Many researchers write that good public space is democratic and inviting to every all type of group and user (Bromley, 2007; Carroll, 2017; Mitchell, 2003). The more range of users, the more the public space and all its aspects are used, therefore there is a direct connection between population and diversity.

6. New Zealand planners, urban designers, and architects should consider establishing a consistent and formalised process (such as the PSET) for evaluating public space throughout the country.

The ‘post-occupancy evaluation’ tool is a widely used by architects, allowing them to make comparable and relevant evaluations of their projects. A similar project whether it is in a similar form as the PSET or something different, would help planners and urban designers achieve more consistent, comparable results allowing for more justified decision making.

7. They should also consider the adoption of an accessible and simple tool such as the PSET to provide evaluations of public spaces before, during, and after public space projects

As well as a lack of a consistent tool, there is a lack of thorough evaluation throughout the development process. Key informants stated that they often did not have the opportunity to determine whether their most recent project was a success before beginning the next one. Therefore it is important that those working on public space have the opportunity to return to their projects multiple times whilst development is ongoing.

8. Consider changes or additions of new components such as ‘climate design’ in the PSET.

All public spaces are different, and not all public spaces have to aspire to have every single component that typically defines a successful space. Therefore considering adaptations to the PSET that are more relevant to a particular scenario may be beneficial. Incorporating an additional scoring component such as climate was seen as one example that may have helped provide additional detail to the tool.

Dunedin specific recommendations

9. Emphasise public space development on the waterfront, however ensure that there are strong pedestrian links between and throughout The Octagon and the waterfront. This could be achieved through a more incremental process.

The outcome the PSET evaluations as well as other research (such as that from Carr *et al.*, 1992) showed how desirable water based public spaces are compared to any other type of space. Utilising and taking advantage of Dunedin’s harbour side presence (just like Wellington)

could open a wealth of public realm opportunities in the city. Development of the harbour side does not necessarily have to occur with one large development, but rather could happen through a more incremental process. This could be as simple as starting with the creation of access routes or developing small spaces between the city centre and the waterfront.

10. Consider shared space or pedestrianisation development of parts, or all, of The Octagon

One of The Octagon's key barriers to success was the busy streets that surrounded and intersected the public space. The clear impact this made on the safety, and overall desirability of the space led to notable drops in many of its PSET scores. Pedestrianisation of public spaces has shown successful outcomes for many public spaces such as in Copenhagen and Bangkok (Jensen, 1999; Kumar and Ross, 2006). It can offer a range of improvements from economic, health, and safety benefits, ultimately leading to a more attractive space.

Christchurch specific recommendations

11. Add additional drawcards and exciting edge effects to undefined CCPS throughout Christchurch.

This could be through the addition of cafes or returning markets to Victoria Square, or the addition of more interactive amenities. Edges have been found to help define a place and space, as well as improve vibrancy, comfort, and security, essentially leading to a more attractive space (Gehl, 1987; Gehl, 2010). This would potentially add a much more defined purpose and attraction to many of Christchurch's public spaces.

Wellington specific recommendations:

12. Use shared space as a method to address growing central city populations

Streets currently cover a large area of Wellington's central city and little public land remains to develop into additional public space as required. Key informants identified that one way to combat growth and the associated need for more public space is to redevelop roads into shared spaces to create additional space for the public. Kaparias *et al.*, (2012) explained how shared spaces continue to allow vehicle access, but promote pedestrian activity and wellbeing as they become the priority user of the space.

6.6 Conclusion

The aim of this research was to explore the adequacy and success of central city public space in New Zealand through the use of a new evaluative tool. This chapter therefore discussed the findings of the research through three research questions. It was determined that all three cities achieved different outcomes in terms of their overall adequacy and success. Wellington was deemed ‘successful,’ Christchurch was found to be ‘adequate’ and Dunedin did not achieve either ‘adequacy’ or ‘success’. In terms of the individual component scores, all the people scores were considered relatively low, though important considerations were given to the timing of research in winter. Innovation, and amenity scores showed notable room for improvement while the remaining components scored well. Additionally, the PSET was determined as a useful tool for evaluating public space, especially when used throughout public space development stages, as well as to provide a preliminary identification of concerns or successful aspects of public space performance. There were many considerations across New Zealand as a whole and individual cities that offered these interchanging results, these considerations were critical to developing a set of recommendations that may help CCPS development in the future. The final chapter will conclude the entire thesis and reflect over the many lessons and considerations learnt throughout the research process.

Chapter 7 – Conclusion

Public space is a critical component of the public realm. Without it, cities lack the interaction and social sustainability that people desire. The role of public space has evolved throughout a short history of planning; from early times where public space guided the necessities of life, to its downfall amidst the rise of traffic orientated planning. Planners and urban designers have since begun to reinstate its importance, especially in the central city. New Zealand cities such as Wellington, Christchurch, and Dunedin are in the process of developing or upgrading more public space in numerous different forms, from harbour side walkways, to shared spaces, and city squares. It is critical that planners and urban designers have a clear understanding of the many aspects that can lead to successful design as we continue through this ‘public space renaissance’ (Carr *et al.*, 1992).

To achieve a comprehensive understanding of public space success, the functionality of public space must be able to be measured and evaluated. Currently, while numerous methods to evaluate public space exist, they are often very place specific, time and resource heavy, and often ineffective. This led to the development of the research aim of this thesis: exploring the adequacy and success of central city public space in New Zealand through the development and application of a new evaluative tool. In ideal circumstances, planners and urban designers would have access to a simple, effective, and accessible tool that allows for a clear evaluation of public space and can be applied in the numerous ongoing public space projects. The development of the public space evaluation tool (PSET) offered an opportunity to do this. To carry out this research and answer the above research aim, three research questions were developed:

1. How adequate and/or successful is central city public space throughout New Zealand?
2. What aspects of central city public space are successful or unsuccessful in New Zealand?
3. Can a simple, applicable evaluation tool allow for effective measurement of the many different aspects and overall success of public space?

To establish these research questions and the PSET, a literature review was developed in Chapter 2. The literature review provided an overview of the topic and established a number of best practice principles for determining how to create successful public space. It highlighted

the importance of many public space aspects and components that were then able to be transferred into a practical evaluation tool. Chapter 3 translated these principles established in the literature review into a methodology. This Chapter explained how and why the case studies and individual public spaces were selected and detailed how the PSET would be used to evaluate these spaces. This offered a variety of results which were displayed in Chapter 5.

Before the results were displayed, an analysis of the context of each case study city and its four public spaces was established in Chapter 4. This identified the many plans and strategies that guided central city public space development throughout the three cities. These plans and strategies identified that significant public space development and upgrades were required (especially in Dunedin and Christchurch). The context also displayed the public spaces on maps and helped determine whether there was an adequate amount of public space within each case study central city. This helped answer the first focus question before going into more detail in the results in Chapter 5. This Chapter laid out all the results obtained from PSET evaluations as well as the key informant interviews. It displayed a number of graphs, tables, and evaluation matrixes that attempted to summarise data and the associated trends.

These results were then discussed in Chapter 6. The aim of the discussion was to answer the three focus questions using the data and information from the results and context and then help interpret them through relevant literature. Some of the key findings showed that people based scores (e.g. population, diversity, interaction) were notably lower than the design scores (e.g. green/environmental, safety, access/vision). When answering the first question it was determined that Dunedin did not offer adequate or successful public space due to its lack of public spaces in the central city and lacked a cohesive linkage or network between them. Christchurch offered adequate public space but several underlying issues were identified throughout PSET evaluations and key informant interviews. These included issues such as having public spaces with undefined purposes, lack of activation and edge effects, as well as some social concerns. However, many of these public spaces were relatively new or still involved in further development as the city continues to regenerate. Wellington was the only space determined to be both adequate and successful, due to its abundance of well-connected public spaces that scored above average.

When answering the second focus question regarding the quality of individual public space component scores there was notable variety. As stated, the people components scored lower

than any of the design scores. Quality safety and vision and accessibility were determined to be the most successful aspects of NZ CCPS, while components such as innovation showed significant room for improvement. In terms of outcomes regarding the third research question (surrounding the effectiveness of using a tool like the PSET) there were a number of mixed opinions, however two key strengths of the PSET were highlighted. These included: the effectiveness of a tool like the PSET that could be used throughout a public space project to compare before and after stages, as well as the PSET being able to identify preliminary issues and stand out components or aspects of a public space before committing to significant developments.

After discussing each research question, a variety of recommendations (mainly for all New Zealand cities, but also for individual cities) were established. These recommendations are listed below in Table 19.

Table 19. *Summary of recommendations*

Recommendations:	
New Zealand wide recommendations:	
1.	Emphasise more shared space developments across central city New Zealand, especially when there are pressures on currently limited amounts of public spaces. Some spaces and areas may be more viable for complete pedestrianisation as well.
2.	Ensure that there are clear pedestrian networks that link central city public spaces together and ensure that they are safe, accessible, and visible.
3.	Allow for more creative thinking in public space projects, especially when spaces have an unclear purpose. Consider adding attractive drawcards and more edge effects to help activate underused space.
4.	Focus on developing more innovative environments, this could be achieved through more creative amenities such as interactive fountains, public art, and group activities (The Octagon, Victoria Square, and Glover Park could especially benefit from this).
5.	Pay close attention to the individual people components in a public space as they may directly influence one another. For example, ensure that there are a diverse range of users, this may help achieve better interaction throughout the space.
6.	New Zealand planners, urban designers, and architects should consider establishing a consistent and formalised process (such as the equivalent of the

'post-occupancy evaluation' tool used by architects) for evaluating public space throughout the country.
7. They should also consider using such a tool to provide evaluations of public spaces before, during, and after public space projects to better track outcomes.
8. Consider changes or additions of new components such as 'climate design' in the PSET.
Dunedin Recommendations
9. Emphasise public space development on the waterfront, however ensure that there are strong pedestrian links between and throughout The Octagon and the waterfront. This could be achieved through a more incremental process.
10. Consider shared space or even pedestrianisation development of parts, or all, of The Octagon.
Christchurch Recommendations
11. Add additional drawcards and exciting edge effects to undefined CCPS throughout Christchurch. This could be through the addition of cafes/restaurants/bars or returning markets to Victoria Square, or the addition of more interactive amenities.
Wellington Recommendations
12. Use shared space as a method to address the future requirement for more public space due to growing central city populations.

7.1 Limitations and future research

One of the key considerations for the overall outcome of this research was that the research was conducted in the middle of winter. If this research was carried out during a different time of year (especially summer) then significantly different results would be expected. Therefore, one possibility for future research would be conducting the same research process in the same case study cities and spaces in the summer. As well as this likely boosting people scores due to better weather, it would be interesting to observe differences between individual component scores between periods of worse weather compared to more desirable weather. It has already been proven that people tend to walk significantly faster during cold winter days than warmer summer days (Gehl, 2010), therefore it would be interesting and useful to determine other components that are impacted by seasonal climates.

Another limitation was that only four public spaces in each of the three case study cities were evaluated. In a perfect scenario, every CCPS throughout every city in New Zealand would be evaluated, which would allow for a more accurate reflection of how spaces performed in each city. Further research could consider additional public spaces in its scope, which would help

provide a better understanding of more public spaces and help establish clearer trends of public space performance. Additionally, as four main types of public spaces were identified and evaluated (water based space, city square, pedestrianised street or shared space, and recently redeveloped space), additional types of space, for example laneways, could also be evaluated in additional research.

As new technology becomes available, new effective methods for evaluating public space become possible. Because single snapshot photography was used as the main method for PSET evaluations, there are ways in which this process could be improved. Although retaining simpleness and efficiency as the key drivers of the PSET is important, videos that capture more depth of public space and its users would help analyse and score in more accurate detail, though they also provide more complex logistical challenges in analysis. Therefore, considering adapting the methods employed in this research with different technology (such as video cameras) could help determine what the most worthwhile and efficient methods of undertaking public space evaluations are.

7.2 Concluding comments

As we continue to realise the importance of central city public space, it is imperative that planners and urban designers can have access to efficient tools that can help improve public spaces across New Zealand. With numerous public space projects, underway, or in development across the country, we need to ensure that these spaces can facilitate the needs for every person living in the city by developing the best public spaces possible. Despite many arguments that the public realm and role of public space within it is declining, there are many more positive views that remind us that we need to simply think more creatively to design spaces that encourage people into spaces to sit, relax, play, eat, and interact. After all, as expressed by key informant 5: “we are all still social animals, and we still need a place and reason to gather”.

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Appendices

Appendix A: Information Sheet for Key Informant Participants



Exploring the adequacy and success of central city public space in New Zealand

INFORMATION SHEET FOR KEY INFORMANT PARTICIPANTS

Thank you for showing an interest in this project. Please read this Information Sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

What is the Aim of the Project?

I am a Master of Planning student from the University of Otago conducting research that explores the adequacy of central city public space throughout New Zealand. I will be taking observations on the urban design of many public space sites throughout Dunedin, Christchurch, and Wellington to evaluate and compare the quality of their central city public spaces.

What Types of Participants are being sought?

The participants sought for this research are key informants such as City Council employees and those working in the field of planning/urban design from corporate agencies and organisations throughout Dunedin, Christchurch and Wellington. The interviewed participants will be selected depending on their role and knowledge of the researched public space.

What will Participants be asked to do?

Should you agree to take part in this project, you will be asked to participate in an interview that will last up to an hour, arranged for a time and location that is convenient to you. This interview will be semi-structured, meaning that several open-ended questions have been developed to cover relevant areas in a discussion; however, the discussion remains flexible depending on the way in which the interview develops. With your consent, I would like to audio record the interview. You may decline to answer any question with no disadvantage to yourself. You may also withdraw any information within one month of the date of interview without any disadvantage to yourself.

Please be aware that you may decide not to take part in the project without any disadvantage to yourself.

What Data or Information will be collected and what use will be made of it?

The data collected during this project will be used to explore the adequacy of New Zealand central city public space. The data will take the form of scores and notes, taken from observations in public spaces, as well as notes and audio recordings (if consent is granted) from interviews. The information gathered will be used in writing a Master of Planning thesis. The results of the research will be published and the thesis will be available in the University of Otago Library (Dunedin, New Zealand), but every attempt will be made to preserve anonymity. A copy of the thesis can be made available on request.

The data collected will be securely stored in a way that only the researcher will be able to gain access to it. Any personal information held on the participants, such as contact details and audio recordings, may be destroyed at the completion of the research even though the data derived from the research will, in most cases be kept for much longer or possibly indefinitely. The research involves an open-ended questioning technique. You have the right to at any time decline to answer any particular question(s).

Can Participants change their mind and withdraw from the project?

You may withdraw from participation in the project at any time [*explain the final point of withdrawal if appropriate*] and without any disadvantage to yourself.

What if Participants have any Questions?

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Chris Pearse-Smith
Department of Geography
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This study has been approved by the Department stated above. However, if you have any concerns about the ethical conduct of the research you may contact the University of Otago Human Ethics Committee through the Human Ethics Committee Administrator (ph +643 479 8256 or email gary.witte@otago.ac.nz). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

Appendix B: Information Sheet for Public Space Users



Exploring the adequacy and success of central city public space in New Zealand

INFORMATION SHEET FOR PUBLIC SPACE USERS

What is the Aim of the Project?

I am a Master of Planning student from the University of Otago conducting research that explores the adequacy of central city public space throughout New Zealand. I will be taking observations on the urban design of many public space sites throughout Dunedin, Christchurch, and Wellington to evaluate and compare the quality of their central city public space.

What Data or Information will be collected and what use will be made of it?

The data collected during this project will be used to explore the adequacy of New Zealand central city public space. The data will take form of scores and notes, taken from observations in public spaces, as well as notes and audio recordings (if consent is granted) from interviews. The information gathered will be used in writing a Master of Planning thesis. The results of the research will be published and the thesis will be available in the University of Otago Library (Dunedin, New Zealand), but every attempt will be made to preserve anonymity. A copy of the thesis can be made available on request.

The data collected will be securely stored in a way that only the researcher will be able to gain access to it. Any information held, may be destroyed at the completion of the research even though the data derived from the research will, in most cases, be kept for much longer or possibly indefinitely.

What if Public Space Users have any Questions?

If you have any questions about our project, either now or in the future, please feel free to contact either:-

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and

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Appendix C: Consent Form for Participants



Exploring the adequacy and success of central city public space in New Zealand

CONSENT FORM FOR PARTICIPANTS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary.
2. I am free to withdraw from the project at any time without any disadvantage.
3. Personal identifying information [*specify e.g. video-tapes/audio-tapes etc*] will be destroyed at the conclusion of the project, but any raw data on which the results of the project depend will be retained in secure storage for at least five years.
4. This project involves an open-questioning technique. The general line of questioning includes questions about the adequacy and current state of central city public space in New Zealand cities. The precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops and that in the event that the line of questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind.
5. The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand), but every attempt will be made to preserve my anonymity.

I agree to take part in this project.

.....
(Signature of participant)

.....
(Date)

.....
(Printed Name)

6. I, as the participant:
- a) agree to being named in the research,
 - b) would rather remain anonymous.]

OR;

Appendix D: Public Space Evaluation Tool Data Template

	Place:			Weather:			Random Events:				<i>Total</i>
Time of day	Pop present (5)	Ratio of used space (5)	Stay time & Walk speed (5)	Diversity (5)	Interaction (5)	Green / Environmental (5)	Safety (5)	Innovative (5)	Vision/ accessibility (5)	Amenities (5)	
<i>Example</i>											
<i>Time</i>											
<i>Total</i>											
<i>Total</i>											
<i>Total</i>											
<i>Average</i>											

Appendix E: Semi-Structure Key Informant Interview Questions

1. What is your name?
2. What is your role in public space in this city?
3. What public spaces have you worked with or responsible for in the city?
4. Are you currently involved with any ongoing central city public space projects?
5. What are the most well-known and popular public spaces in the city and why?
6. What are the least popular public spaces and why?
7. Do you believe there is adequate central city public space in this city in terms of quality and amount?
8. How do you provide quality public space for people and do the spaces in this city achieve this?
9. What do you see as the key challenges for creating good central city public space?
10. What do you believe the impact of continual city growth will have on these central city public spaces?
11. I have established an evaluative tool to measure and compare components and the overall success of the urban and people design of public spaces. Do you believe this is an effective way to evaluate whether a space works or not? Would you do anything differently?